

Pantheon Summary (Generated at Tue, 25 Jul 2017 08:21:37 +0000 with pantheon version 266b116f0817a07d000b4d181ce187fd27d3e654)

Repeated the test of 15 congestion control schemes 3 times.

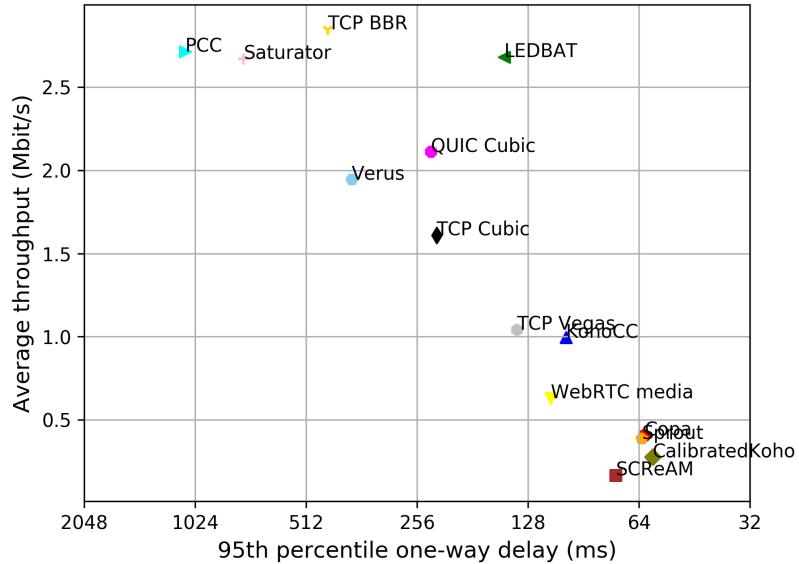
Each test lasted for 30 seconds running 1 flow.

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

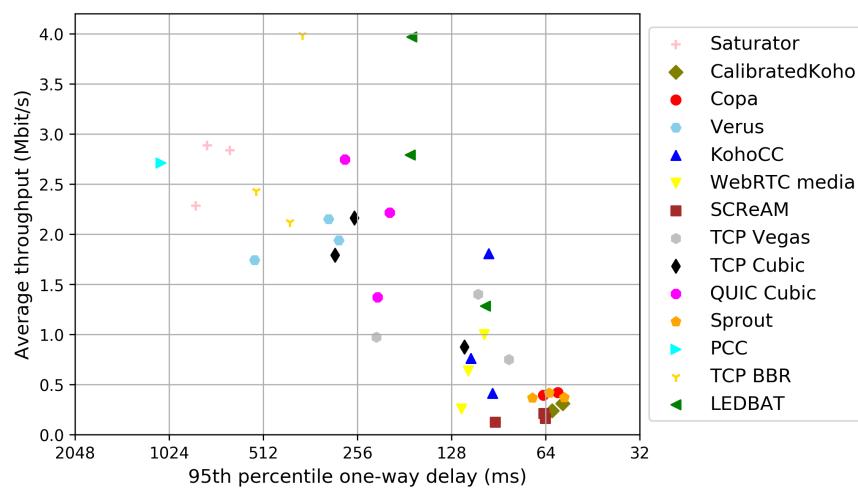
NTP offset measured against nets.org.sg and has been applied to correct the timestamps in logs.

```
git branch: master @ 266b116f0817a07d000b4d181ce187fd27d3e654
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
M datagrump/sender.cc
third_party/genericCC @ dae96123232f1bcb37725348fa2378691ce26725
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179aab4a906ce6bb7cf3cf
third_party/pantheon-stimuli @ fc73a85ca16c34366d1888dc8a0d0d88d4ebf2a7
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 @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

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



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



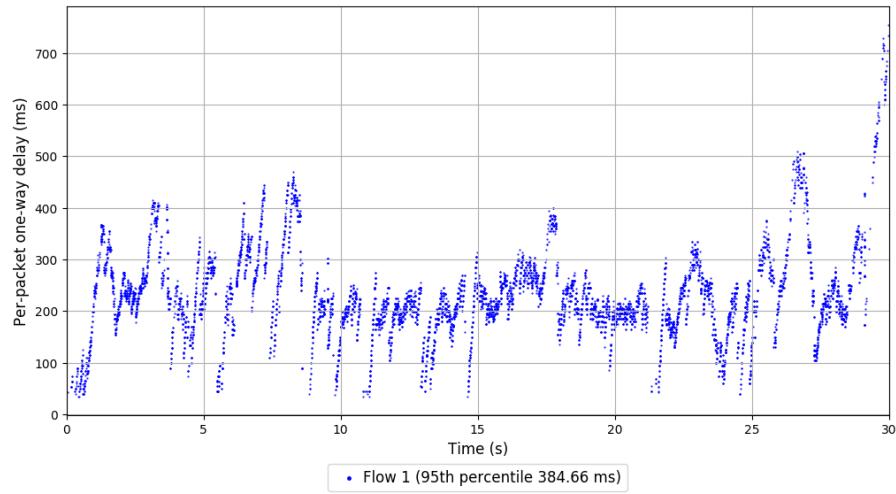
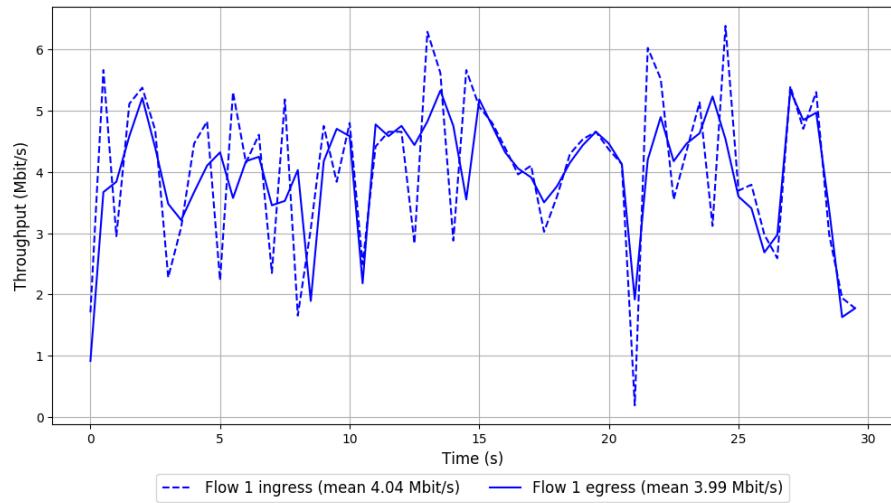
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	2.85	448.68	1.46
CalibratedKoho	3	0.28	58.80	0.86
Copa	3	0.41	61.89	0.00
TCP Cubic	3	1.61	226.95	1.25
KohoCC	3	1.00	101.10	0.02
LEDBAT	3	2.68	148.54	0.53
PCC	3	2.71	1089.69	41.97
QUIC Cubic	3	2.11	234.87	0.72
Saturator	3	2.67	757.62	1.61
SCReAM	3	0.16	74.05	0.28
Sprout	3	0.39	62.97	0.31
TaoVA-100x	3	nan	nan	nan
TCP Vegas	3	1.04	137.51	0.48
Verus	3	1.94	385.89	1.12
WebRTC media	3	0.63	111.10	0.42

Run 1: Statistics of TCP BBR

```
Start at: Tue, 25 Jul 2017 06:51:07 +0000
End at: Tue, 25 Jul 2017 06:51:37 +0000
Local clock offset: 1.61 ms
Remote clock offset: -17.176 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:08 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.99 Mbit/s
95th percentile per-packet one-way delay: 384.657 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 3.99 Mbit/s
95th percentile per-packet one-way delay: 384.657 ms
Loss rate: 1.24%
```

Run 1: Report of TCP BBR — Data Link

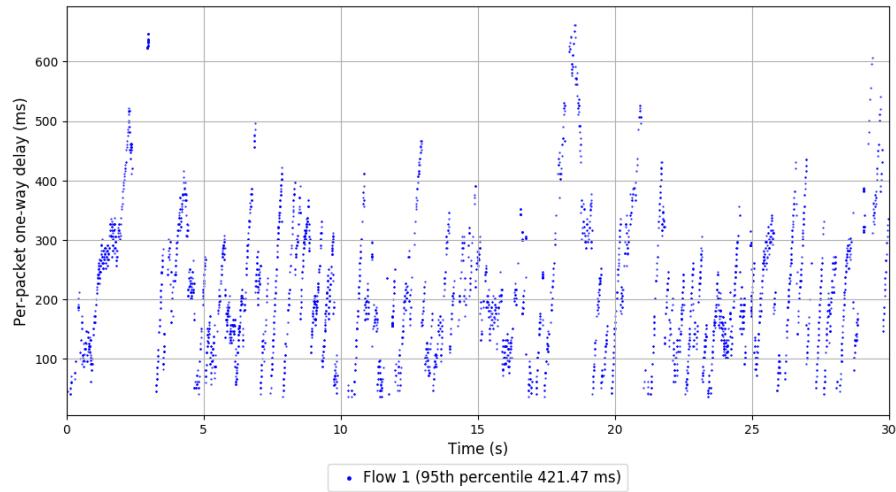
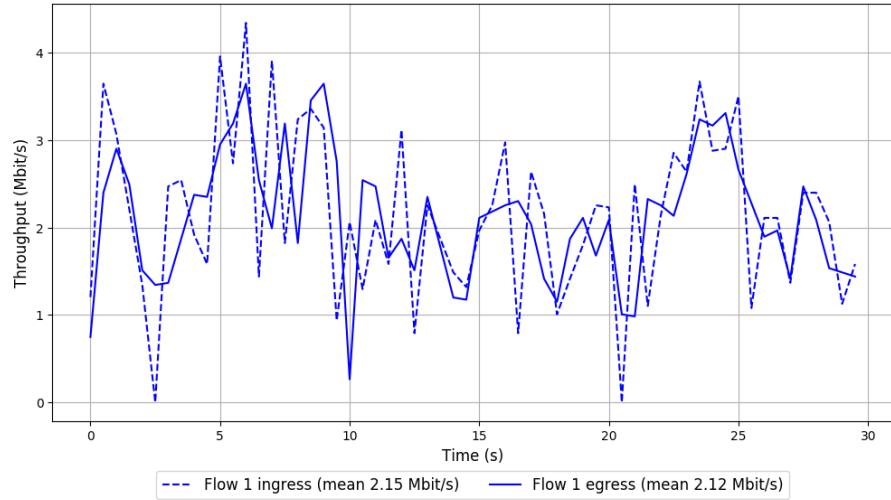


Run 2: Statistics of TCP BBR

```
Start at: Tue, 25 Jul 2017 07:07:30 +0000
End at: Tue, 25 Jul 2017 07:08:00 +0000
Local clock offset: 0.196 ms
Remote clock offset: -16.825 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:08 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 421.471 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 421.471 ms
Loss rate: 1.40%
```

Run 2: Report of TCP BBR — Data Link

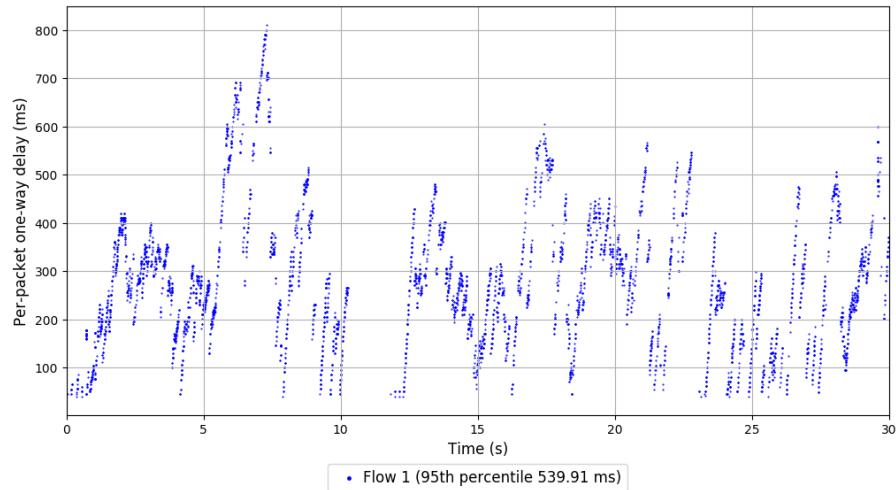
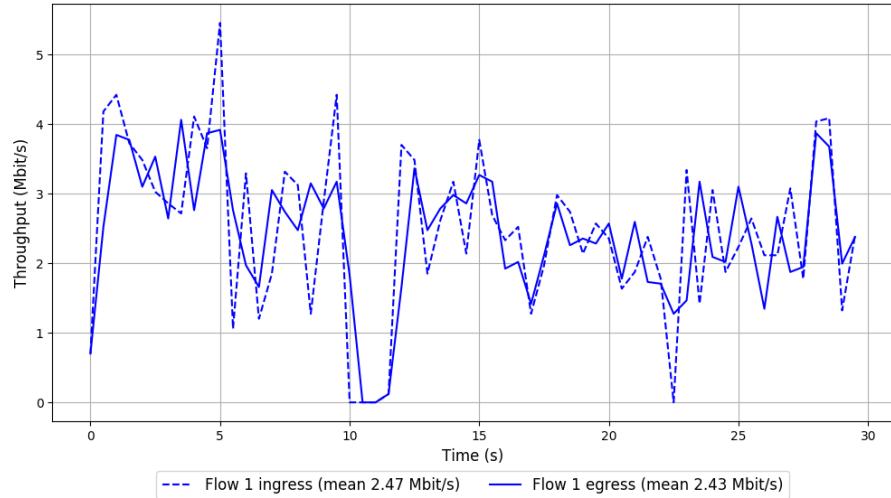


Run 3: Statistics of TCP BBR

```
Start at: Tue, 25 Jul 2017 07:23:48 +0000
End at: Tue, 25 Jul 2017 07:24:18 +0000
Local clock offset: -1.645 ms
Remote clock offset: -19.351 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:10 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 539.906 ms
Loss rate: 1.73%
-- Flow 1:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 539.906 ms
Loss rate: 1.73%
```

Run 3: Report of TCP BBR — Data Link



```
Run 1: Statistics of CalibratedKoho
```

```
Start at: Tue, 25 Jul 2017 06:55:31 +0000
```

```
End at: Tue, 25 Jul 2017 06:56:01 +0000
```

```
Local clock offset: 2.206 ms
```

```
Remote clock offset: -17.137 ms
```

```
# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:10 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 0.24 Mbit/s
```

```
95th percentile per-packet one-way delay: 61.117 ms
```

```
Loss rate: 0.83%
```

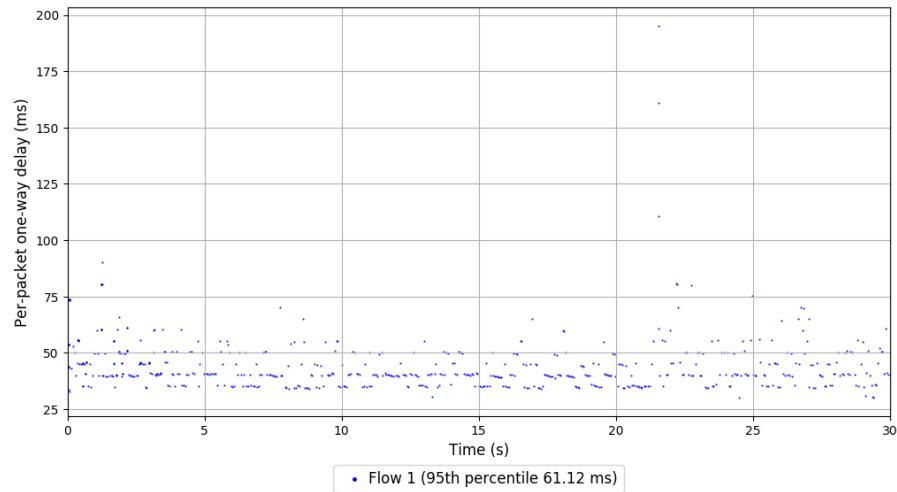
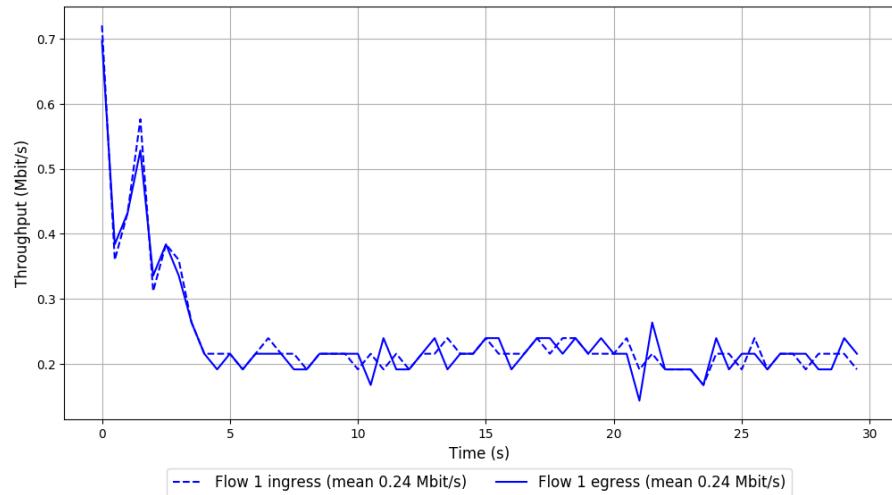
```
-- Flow 1:
```

```
Average throughput: 0.24 Mbit/s
```

```
95th percentile per-packet one-way delay: 61.117 ms
```

```
Loss rate: 0.83%
```

Run 1: Report of CalibratedKoho — Data Link

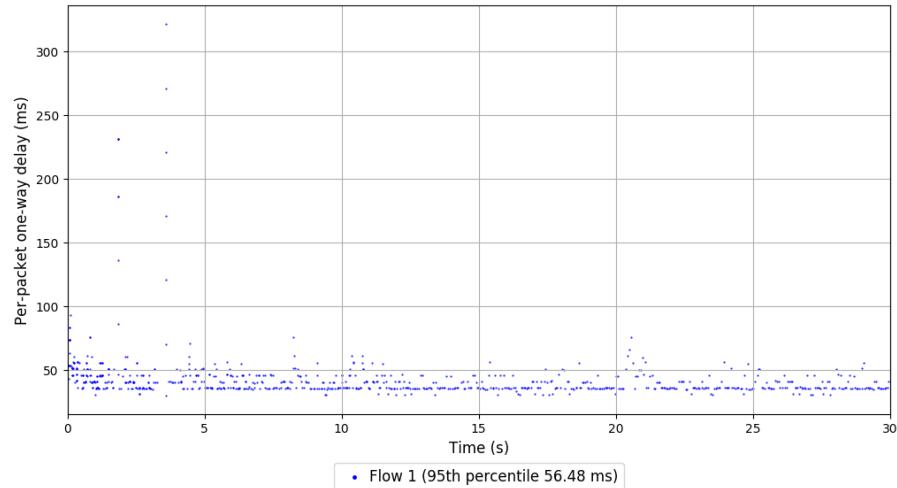
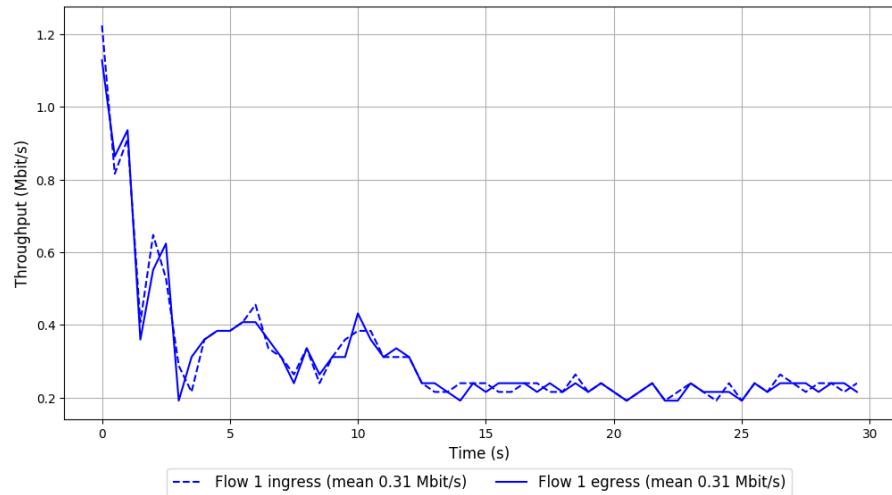


Run 2: Statistics of CalibratedKoho

```
Start at: Tue, 25 Jul 2017 07:11:52 +0000
End at: Tue, 25 Jul 2017 07:12:22 +0000
Local clock offset: 1.014 ms
Remote clock offset: -17.867 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:10 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 56.479 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 56.479 ms
Loss rate: 0.89%
```

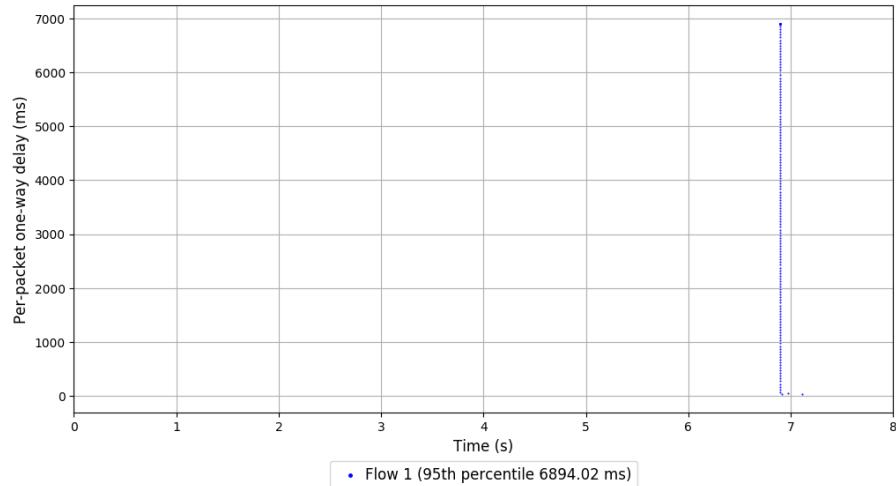
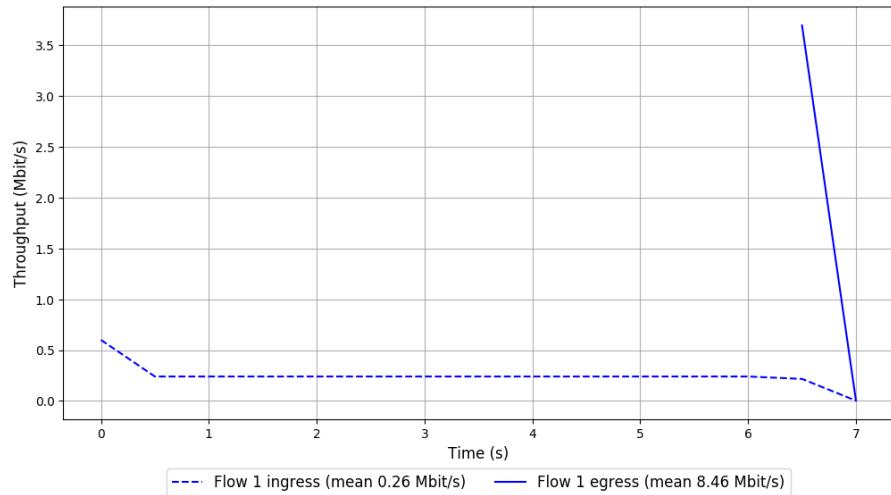
Run 2: Report of CalibratedKoho — Data Link



Run 3: Statistics of CalibratedKoho

Start at: Tue, 25 Jul 2017 07:28:10 +0000
End at: Tue, 25 Jul 2017 07:28:40 +0000
Local clock offset: 1.057 ms
Remote clock offset: -19.44 ms

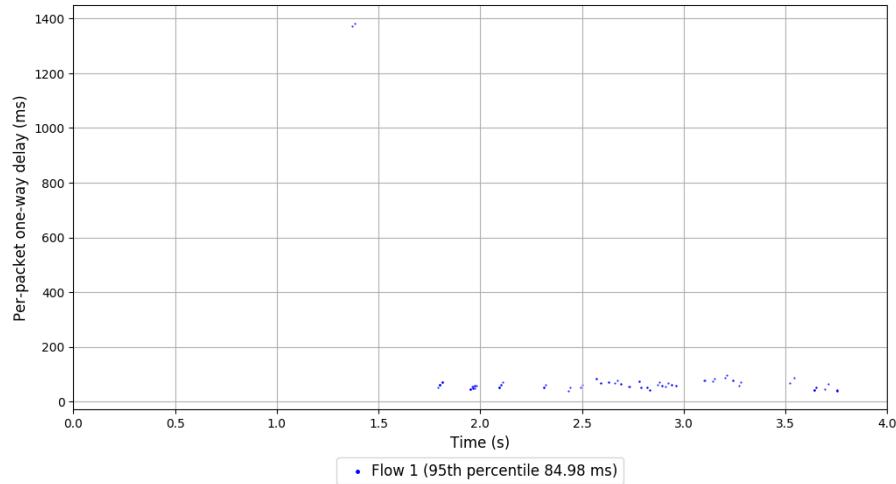
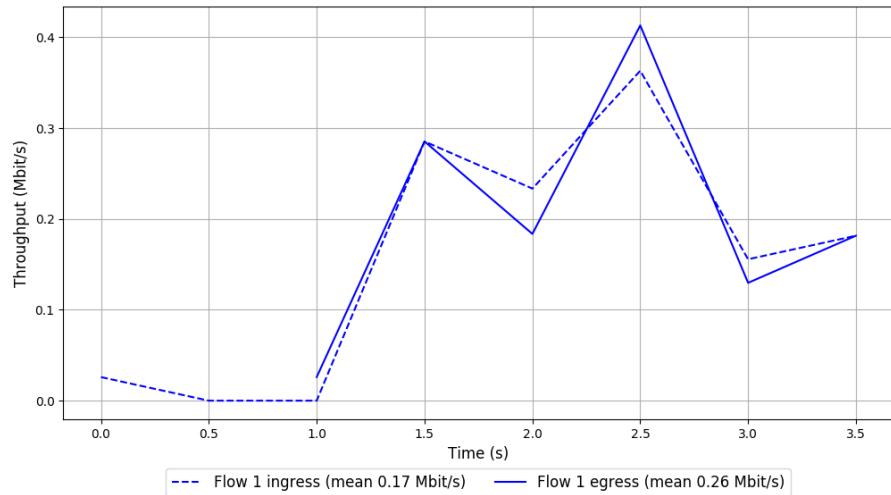
Run 3: Report of CalibratedKoho — Data Link



Run 1: Statistics of Copa

Start at: Tue, 25 Jul 2017 06:54:26 +0000
End at: Tue, 25 Jul 2017 06:54:56 +0000
Local clock offset: 0.834 ms
Remote clock offset: -16.293 ms

Run 1: Report of Copa — Data Link

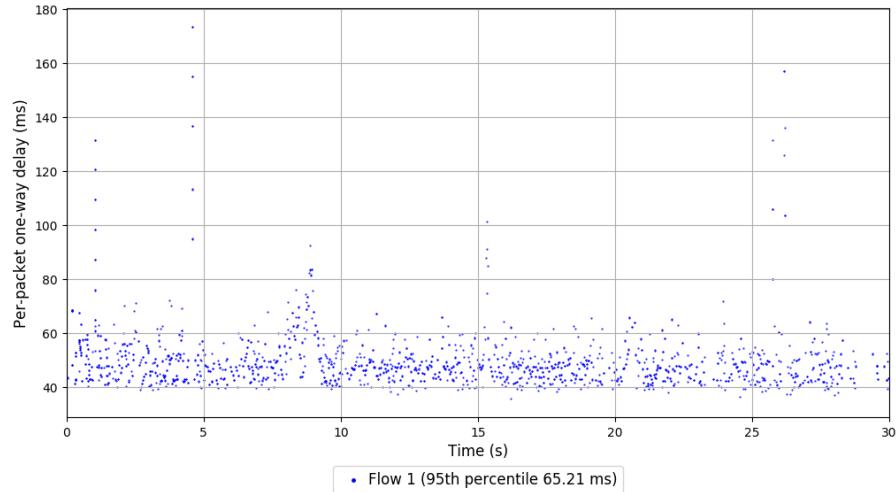
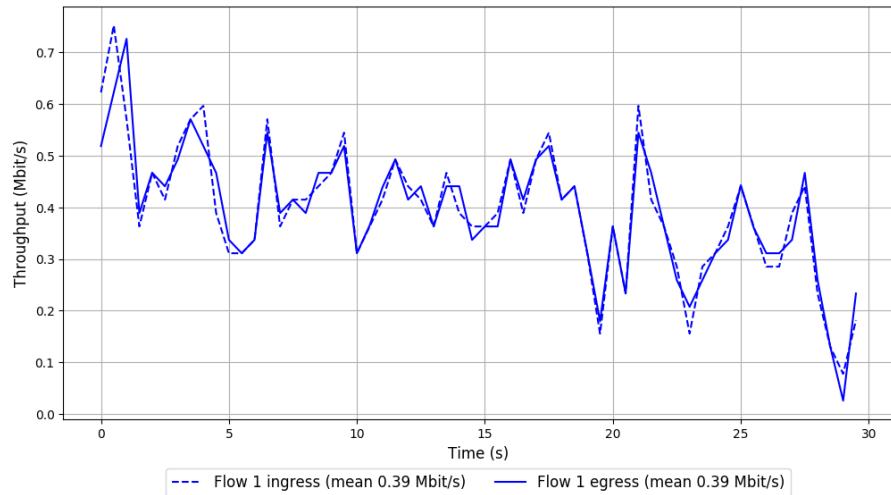


Run 2: Statistics of Copa

```
Start at: Tue, 25 Jul 2017 07:10:46 +0000
End at: Tue, 25 Jul 2017 07:11:16 +0000
Local clock offset: -0.254 ms
Remote clock offset: -17.192 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:12 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 65.210 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 65.210 ms
Loss rate: 0.00%
```

Run 2: Report of Copa — Data Link

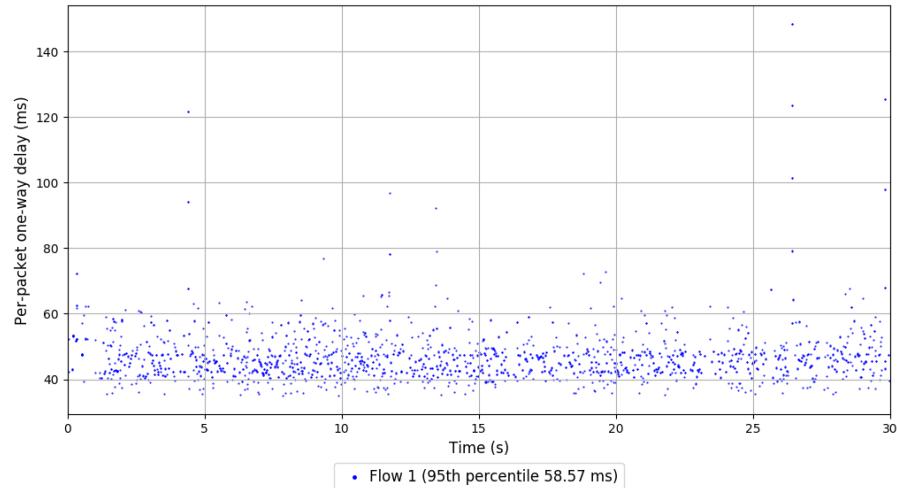
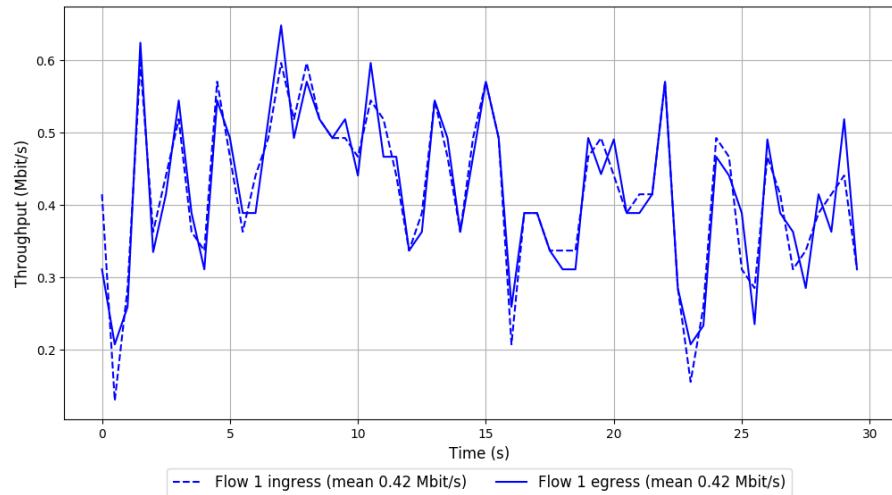


Run 3: Statistics of Copa

```
Start at: Tue, 25 Jul 2017 07:27:05 +0000
End at: Tue, 25 Jul 2017 07:27:35 +0000
Local clock offset: -0.872 ms
Remote clock offset: -18.054 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:12 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 58.567 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 58.567 ms
Loss rate: 0.00%
```

Run 3: Report of Copa — Data Link



```
Run 1: Statistics of TCP Cubic
```

```
Start at: Tue, 25 Jul 2017 06:45:41 +0000
```

```
End at: Tue, 25 Jul 2017 06:46:11 +0000
```

```
Local clock offset: 2.077 ms
```

```
Remote clock offset: -17.188 ms
```

```
# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:14 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 1.79 Mbit/s
```

```
95th percentile per-packet one-way delay: 302.301 ms
```

```
Loss rate: 0.97%
```

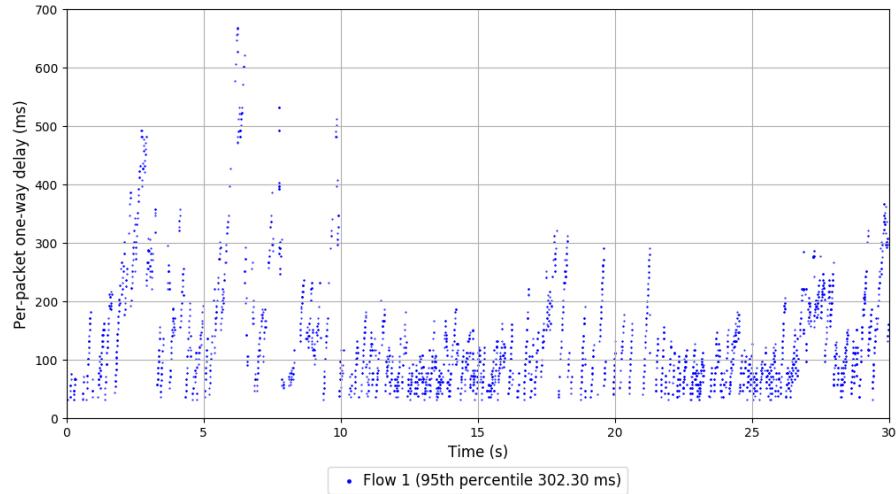
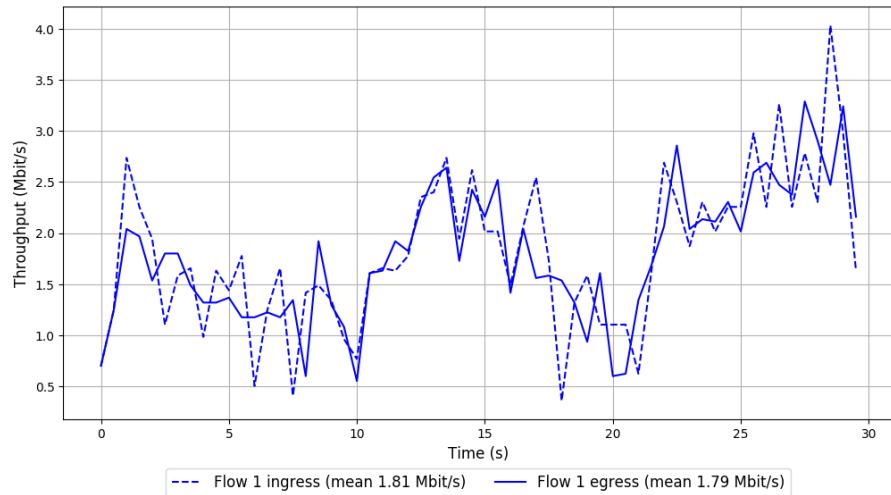
```
-- Flow 1:
```

```
Average throughput: 1.79 Mbit/s
```

```
95th percentile per-packet one-way delay: 302.301 ms
```

```
Loss rate: 0.97%
```

Run 1: Report of TCP Cubic — Data Link

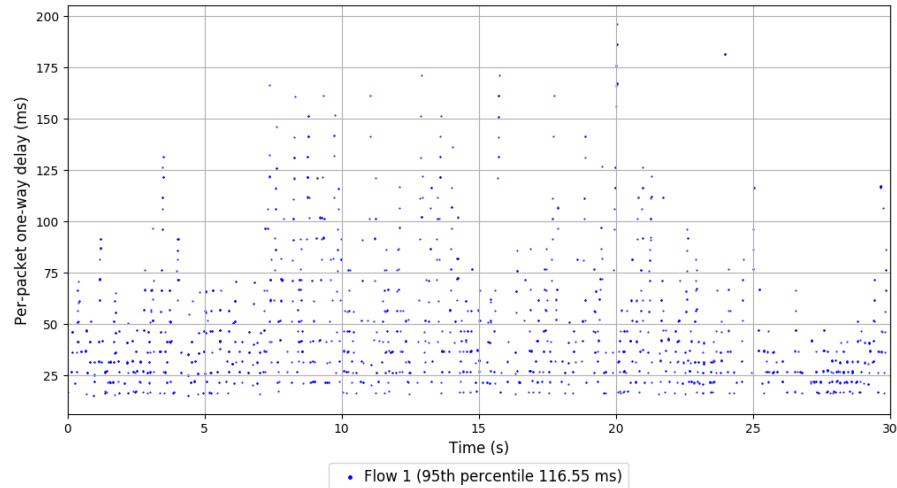
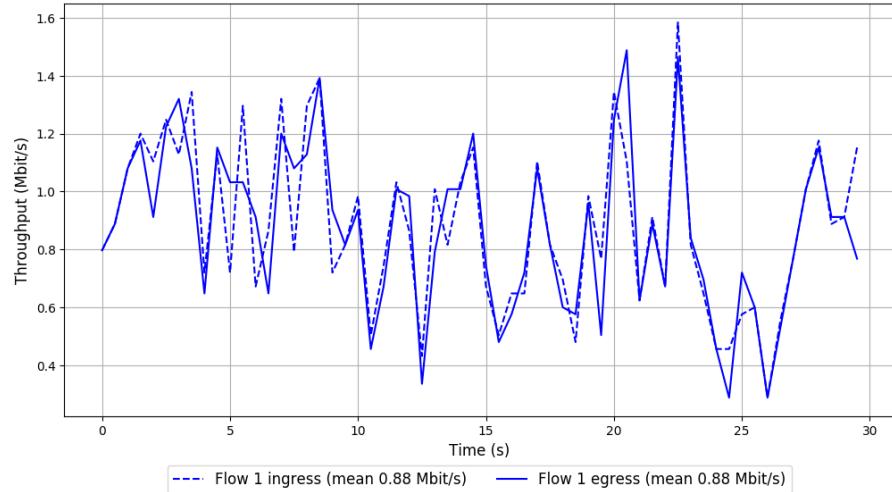


Run 2: Statistics of TCP Cubic

```
Start at: Tue, 25 Jul 2017 07:02:04 +0000
End at: Tue, 25 Jul 2017 07:02:34 +0000
Local clock offset: 18.145 ms
Remote clock offset: -17.137 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:14 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 116.549 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 116.549 ms
Loss rate: 1.36%
```

Run 2: Report of TCP Cubic — Data Link

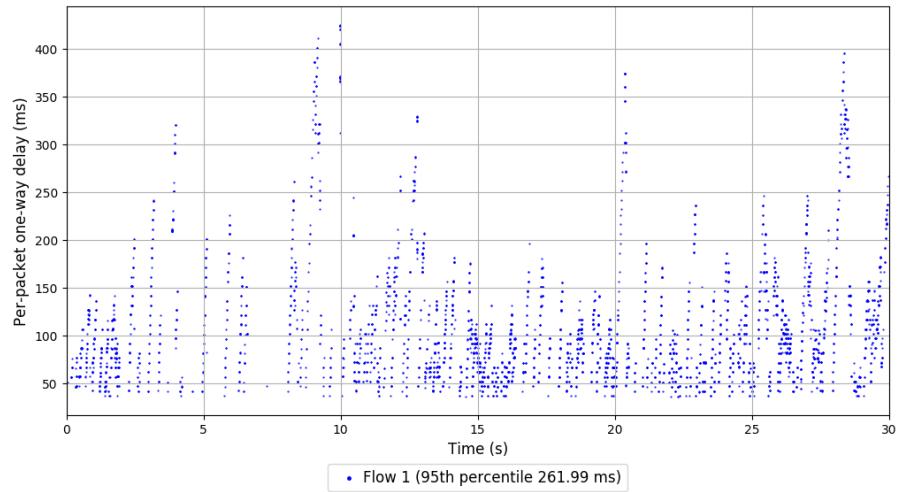
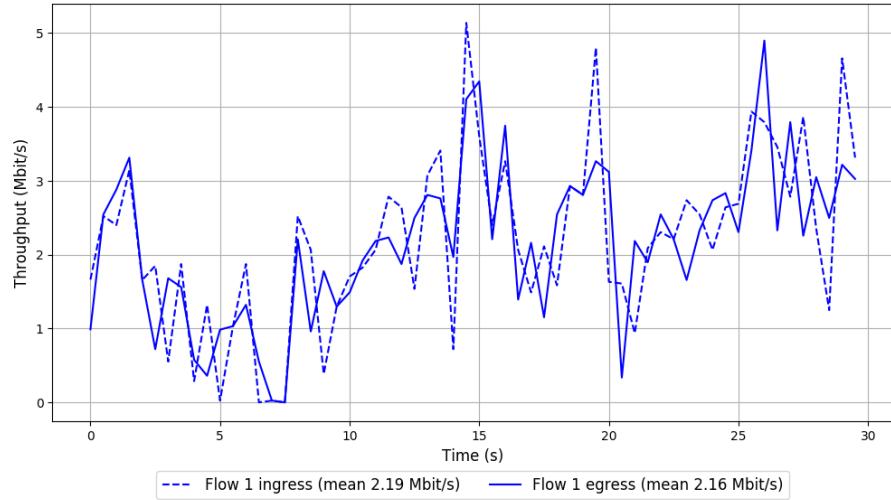


Run 3: Statistics of TCP Cubic

```
Start at: Tue, 25 Jul 2017 07:18:22 +0000
End at: Tue, 25 Jul 2017 07:18:52 +0000
Local clock offset: 1.38 ms
Remote clock offset: -18.672 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:15 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 261.992 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 261.992 ms
Loss rate: 1.41%
```

Run 3: Report of TCP Cubic — Data Link



```
Run 1: Statistics of KohoCC
```

```
Start at: Tue, 25 Jul 2017 06:58:48 +0000
```

```
End at: Tue, 25 Jul 2017 06:59:18 +0000
```

```
Local clock offset: 0.659 ms
```

```
Remote clock offset: -15.387 ms
```

```
# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:15 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 0.42 Mbit/s
```

```
95th percentile per-packet one-way delay: 94.699 ms
```

```
Loss rate: 0.00%
```

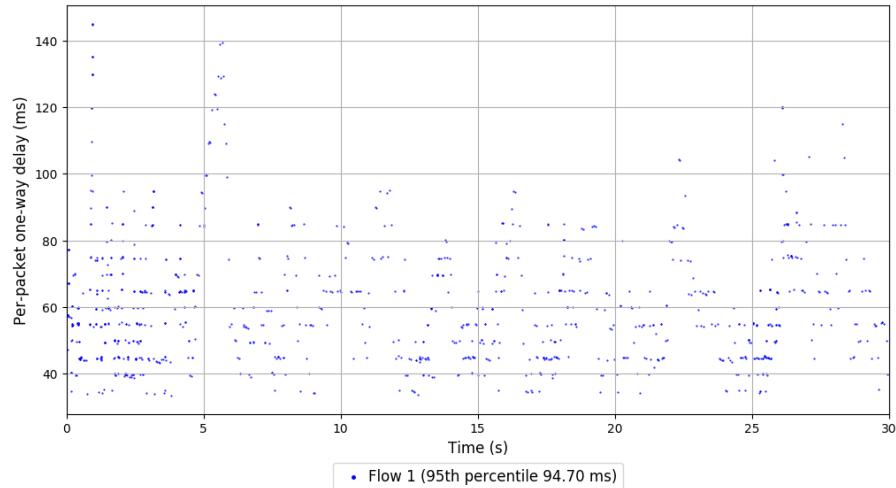
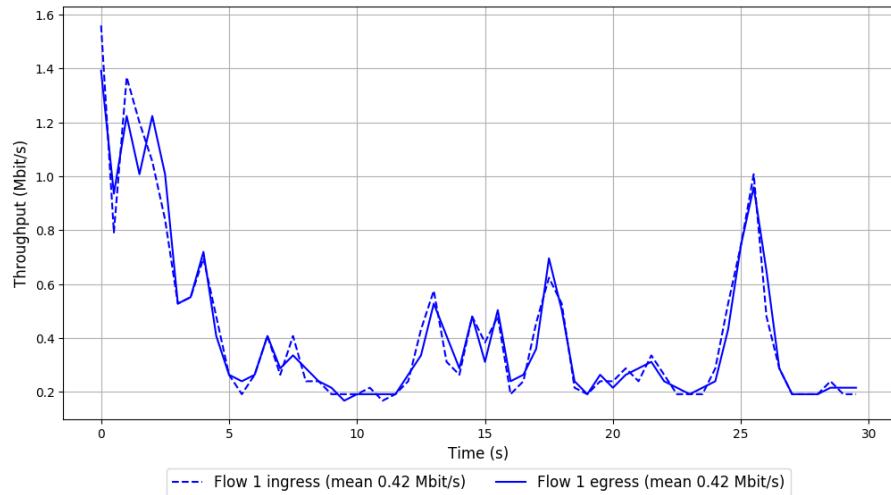
```
-- Flow 1:
```

```
Average throughput: 0.42 Mbit/s
```

```
95th percentile per-packet one-way delay: 94.699 ms
```

```
Loss rate: 0.00%
```

Run 1: Report of KohoCC — Data Link

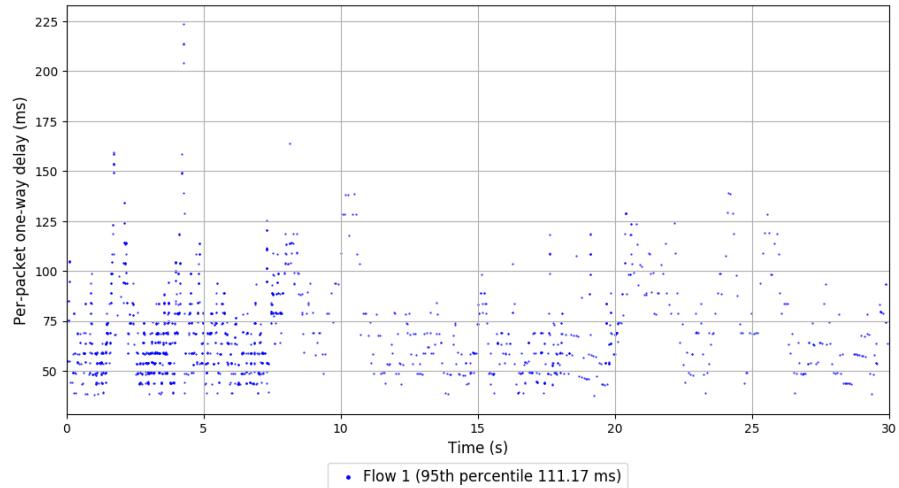
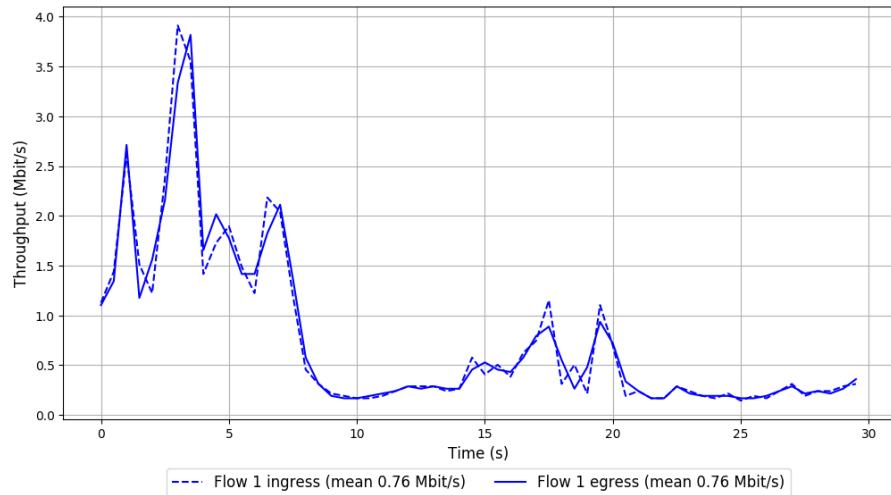


Run 2: Statistics of KohoCC

```
Start at: Tue, 25 Jul 2017 07:15:07 +0000
End at: Tue, 25 Jul 2017 07:15:37 +0000
Local clock offset: -0.574 ms
Remote clock offset: -17.552 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:16 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 111.166 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 111.166 ms
Loss rate: 0.05%
```

Run 2: Report of KohoCC — Data Link

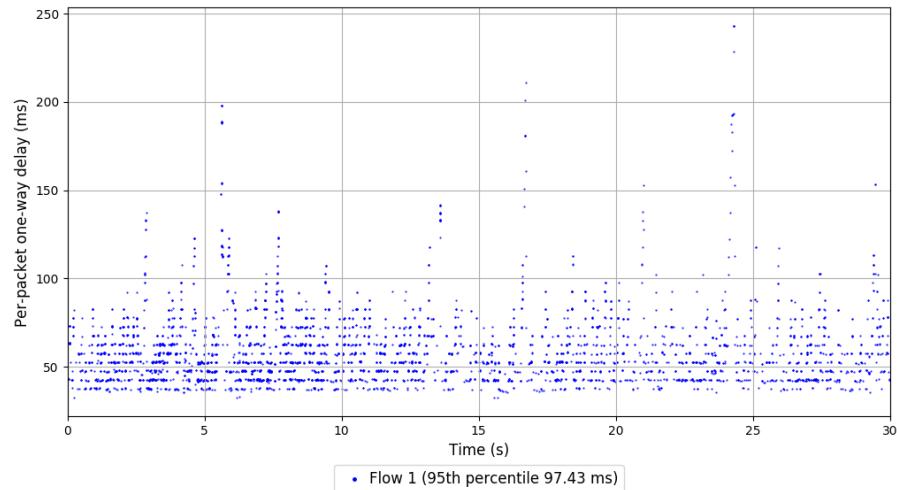
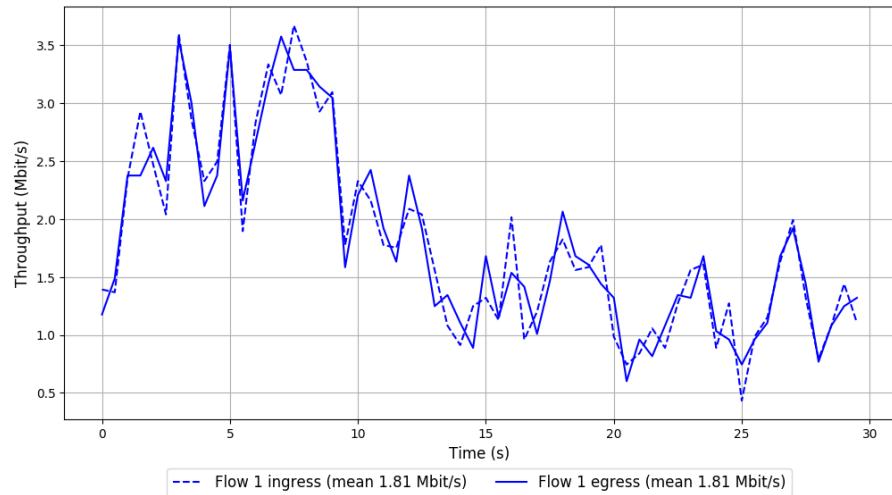


Run 3: Statistics of KohoCC

```
Start at: Tue, 25 Jul 2017 07:31:25 +0000
End at: Tue, 25 Jul 2017 07:31:55 +0000
Local clock offset: 1.097 ms
Remote clock offset: -17.191 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:16 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 97.431 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 97.431 ms
Loss rate: 0.00%
```

Run 3: Report of KohoCC — Data Link

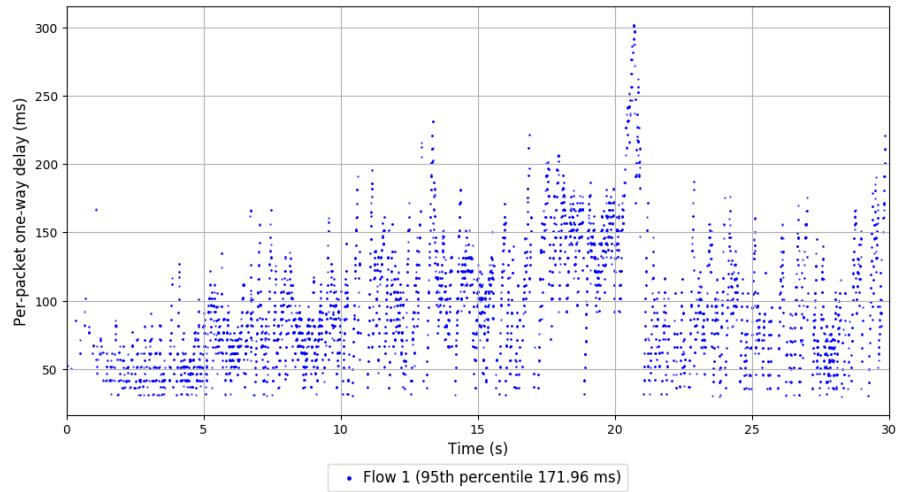
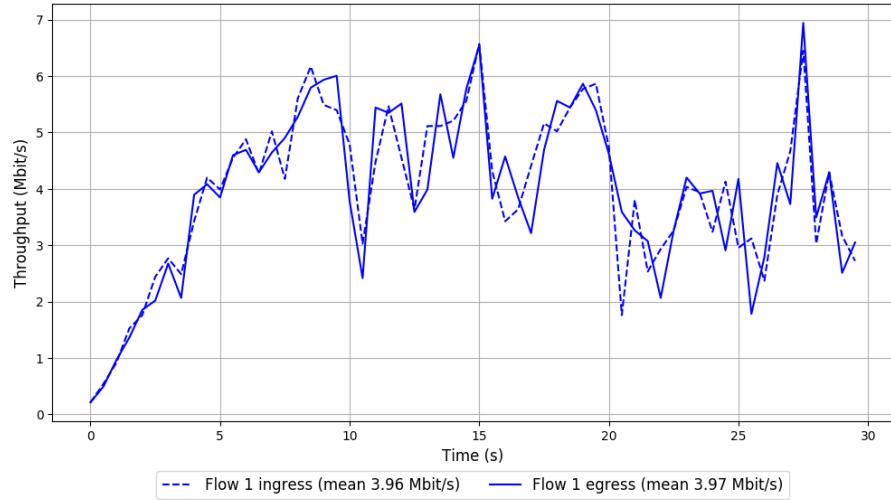


```
Run 1: Statistics of LEDBAT
```

```
Start at: Tue, 25 Jul 2017 06:43:29 +0000
End at: Tue, 25 Jul 2017 06:43:59 +0000
Local clock offset: 1.807 ms
Remote clock offset: -17.947 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:17 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.97 Mbit/s
95th percentile per-packet one-way delay: 171.961 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 3.97 Mbit/s
95th percentile per-packet one-way delay: 171.961 ms
Loss rate: 0.29%
```

Run 1: Report of LEDBAT — Data Link

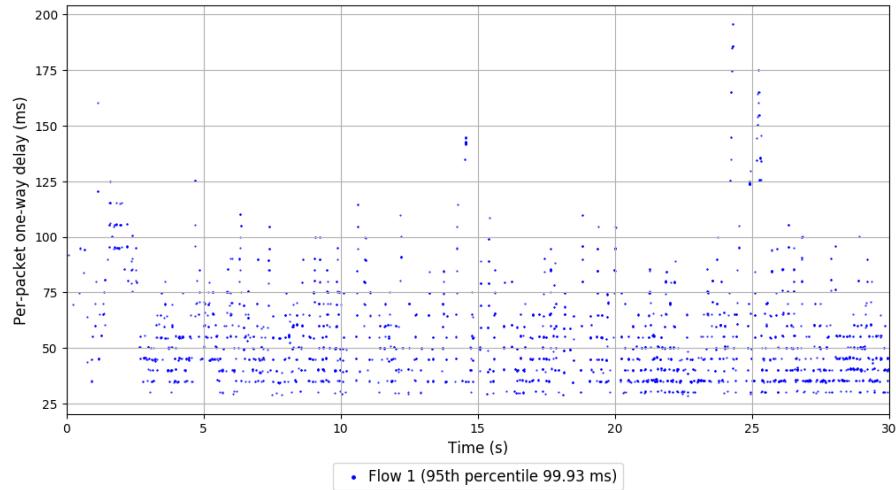
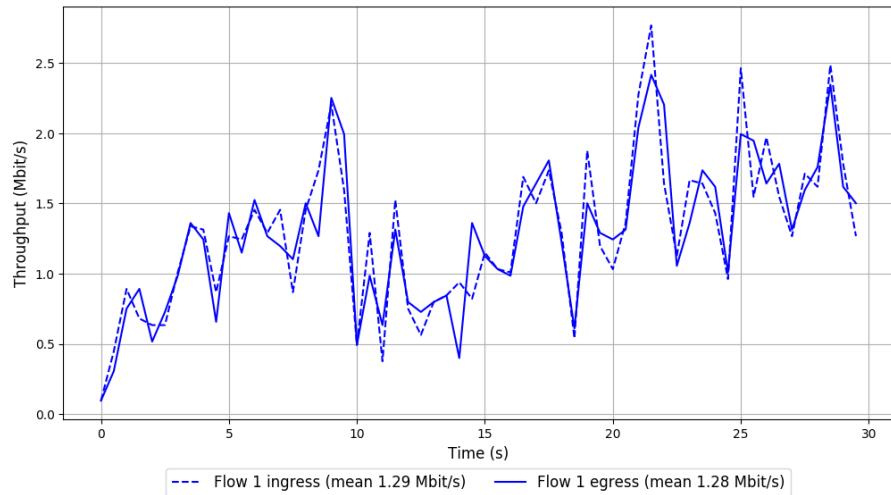


Run 2: Statistics of LEDBAT

```
Start at: Tue, 25 Jul 2017 06:59:54 +0000
End at: Tue, 25 Jul 2017 07:00:24 +0000
Local clock offset: 2.363 ms
Remote clock offset: -18.651 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:18 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 99.927 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 99.927 ms
Loss rate: 0.91%
```

Run 2: Report of LEDBAT — Data Link

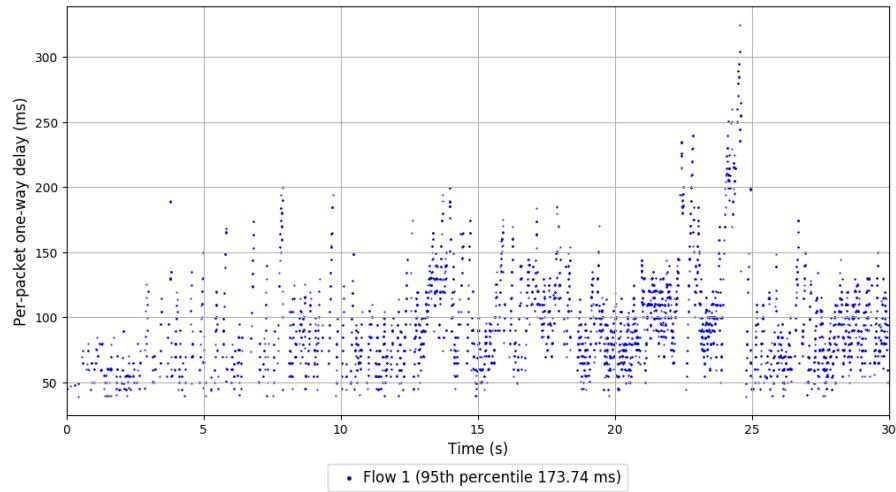
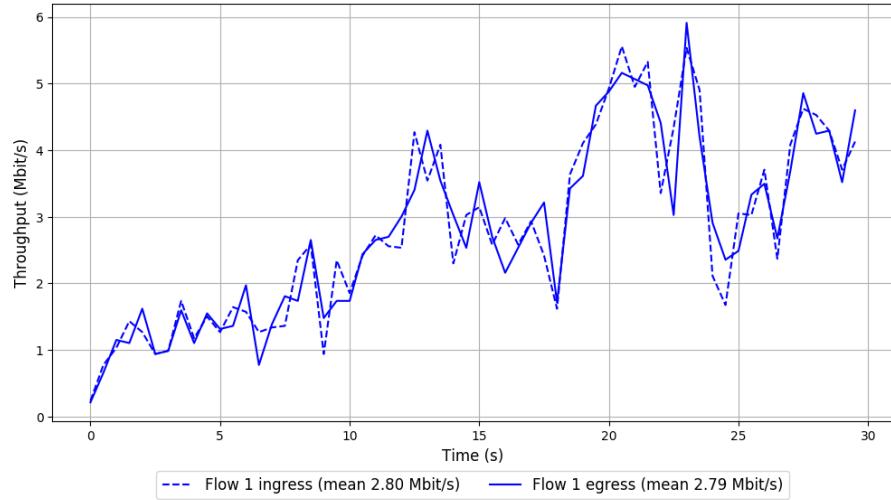


Run 3: Statistics of LEDBAT

```
Start at: Tue, 25 Jul 2017 07:16:12 +0000
End at: Tue, 25 Jul 2017 07:16:42 +0000
Local clock offset: -0.097 ms
Remote clock offset: -16.43 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:19 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.79 Mbit/s
95th percentile per-packet one-way delay: 173.737 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 2.79 Mbit/s
95th percentile per-packet one-way delay: 173.737 ms
Loss rate: 0.38%
```

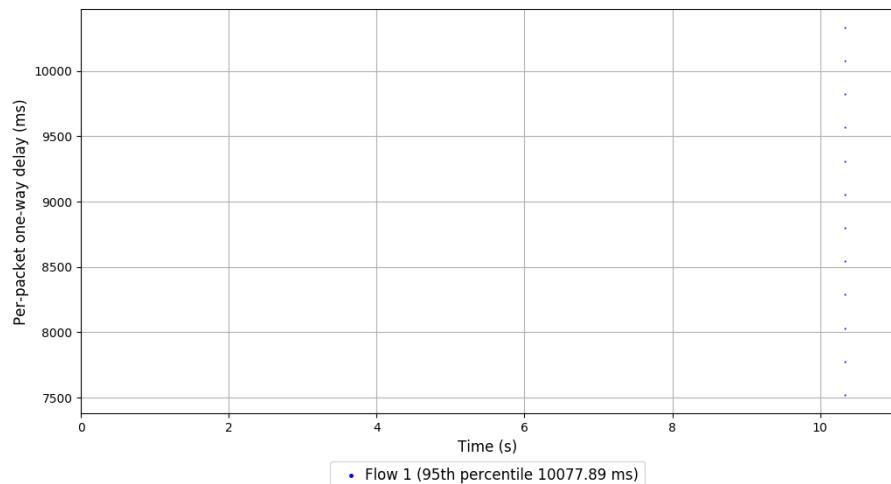
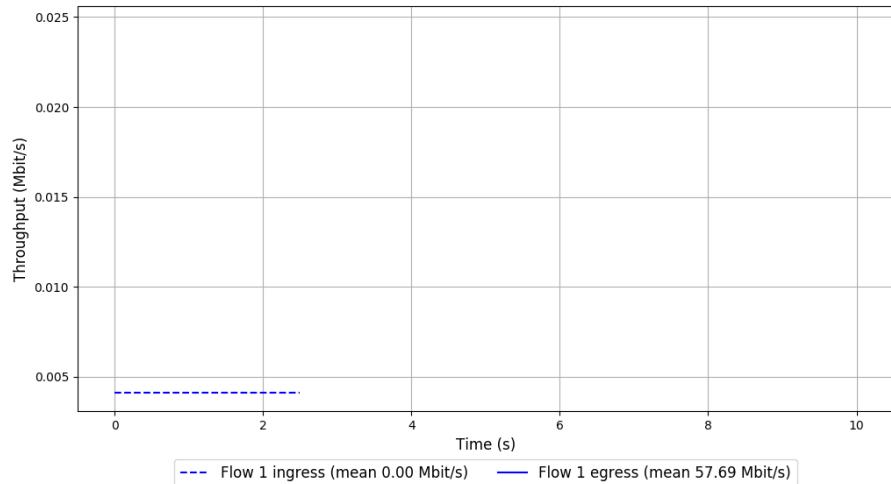
Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC

Start at: Tue, 25 Jul 2017 06:56:36 +0000
End at: Tue, 25 Jul 2017 06:57:06 +0000
Local clock offset: 1.644 ms
Remote clock offset: -16.763 ms

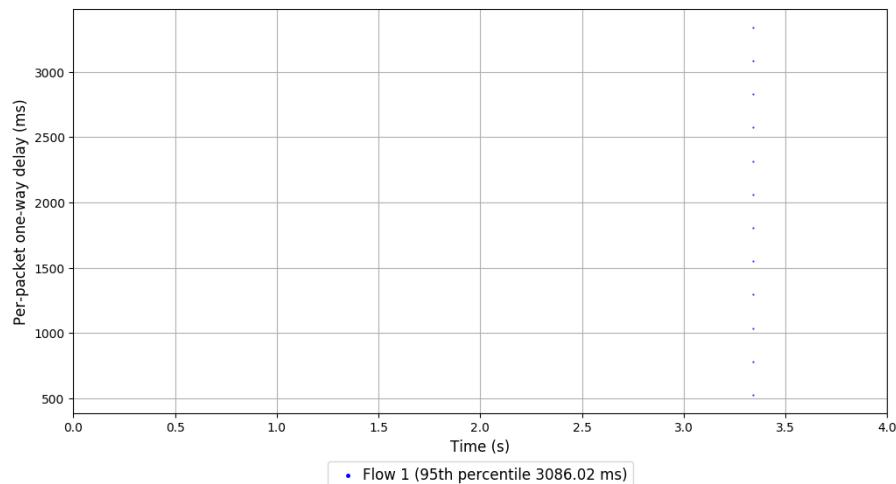
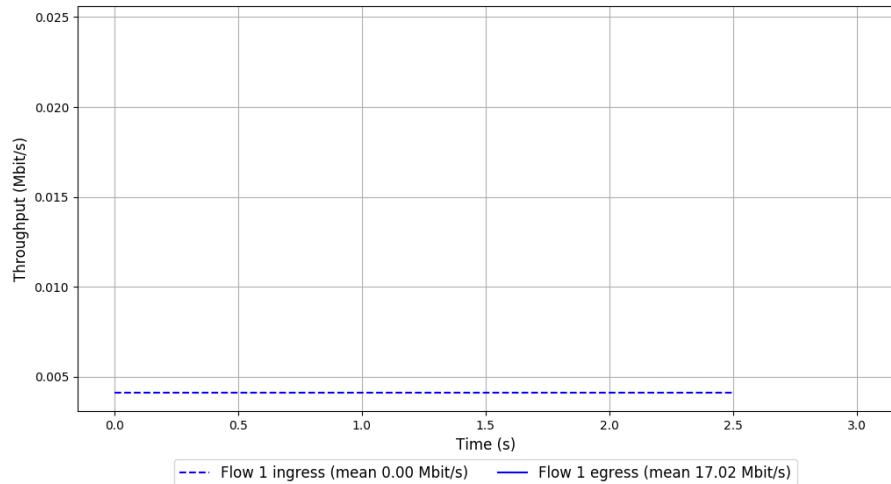
Run 1: Report of PCC — Data Link



Run 2: Statistics of PCC

Start at: Tue, 25 Jul 2017 07:12:57 +0000
End at: Tue, 25 Jul 2017 07:13:27 +0000
Local clock offset: 1.867 ms
Remote clock offset: -17.68 ms

Run 2: Report of PCC — Data Link

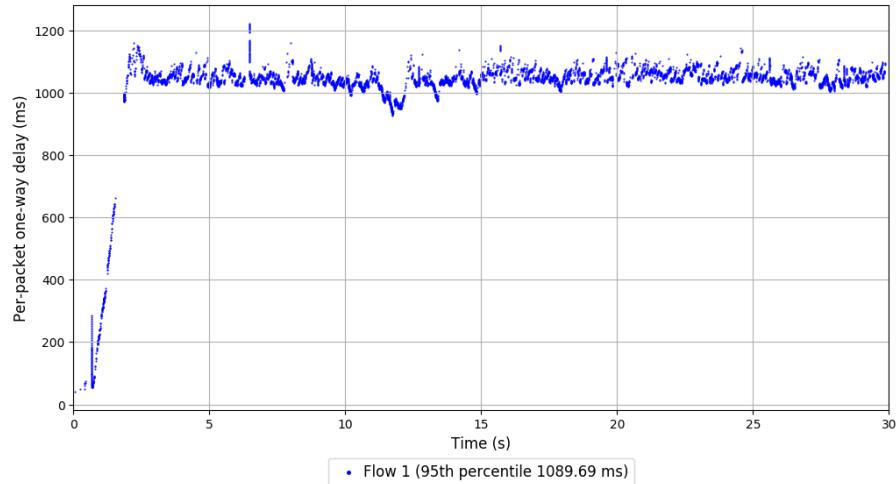
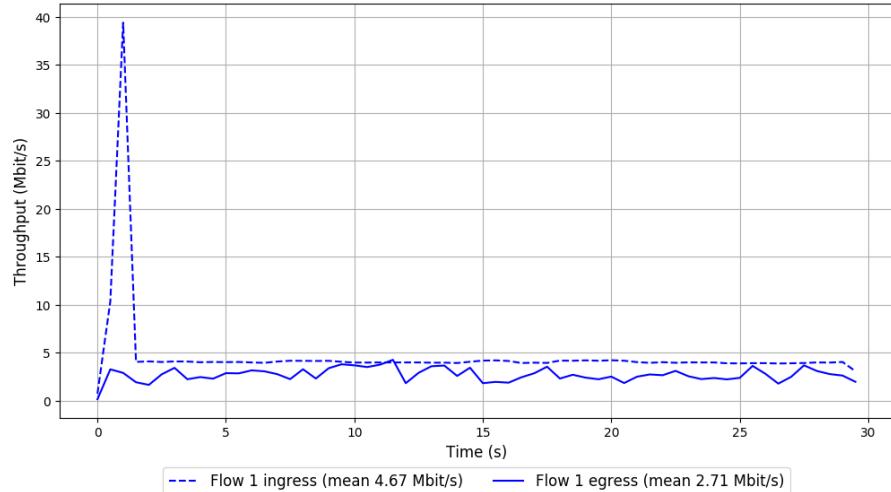


Run 3: Statistics of PCC

```
Start at: Tue, 25 Jul 2017 07:29:15 +0000
End at: Tue, 25 Jul 2017 07:29:45 +0000
Local clock offset: 1.645 ms
Remote clock offset: -17.824 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:20 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.71 Mbit/s
95th percentile per-packet one-way delay: 1089.687 ms
Loss rate: 41.97%
-- Flow 1:
Average throughput: 2.71 Mbit/s
95th percentile per-packet one-way delay: 1089.687 ms
Loss rate: 41.97%
```

Run 3: Report of PCC — Data Link



```
Run 1: Statistics of QUIC Cubic
```

```
Start at: Tue, 25 Jul 2017 06:46:46 +0000
```

```
End at: Tue, 25 Jul 2017 06:47:16 +0000
```

```
Local clock offset: 1.895 ms
```

```
Remote clock offset: -17.641 ms
```

```
# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:21 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 2.22 Mbit/s
```

```
95th percentile per-packet one-way delay: 202.223 ms
```

```
Loss rate: 0.41%
```

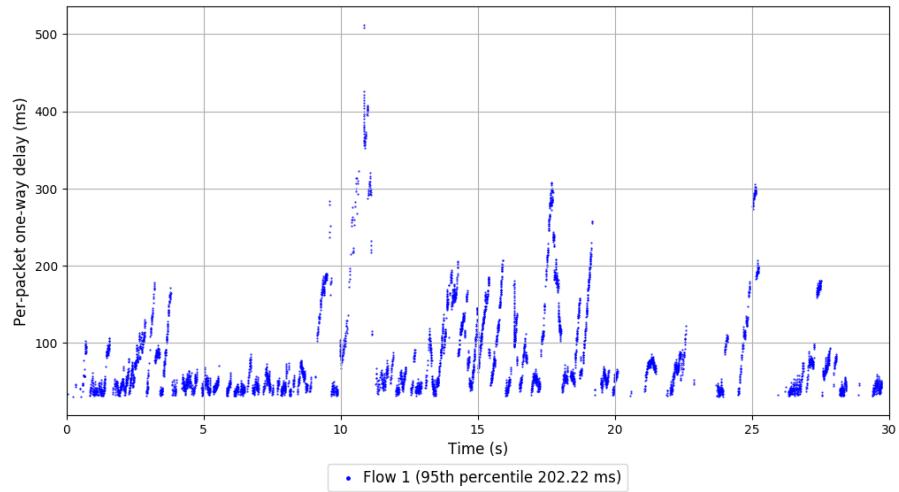
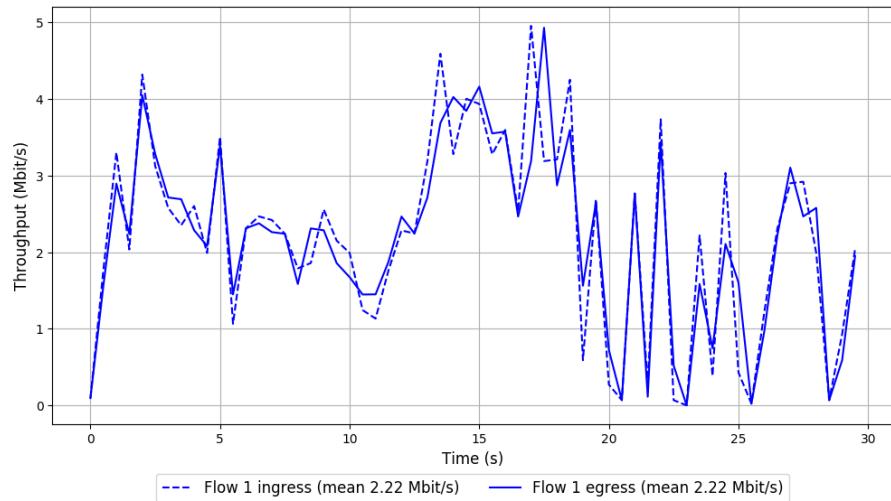
```
-- Flow 1:
```

```
Average throughput: 2.22 Mbit/s
```

```
95th percentile per-packet one-way delay: 202.223 ms
```

```
Loss rate: 0.41%
```

Run 1: Report of QUIC Cubic — Data Link

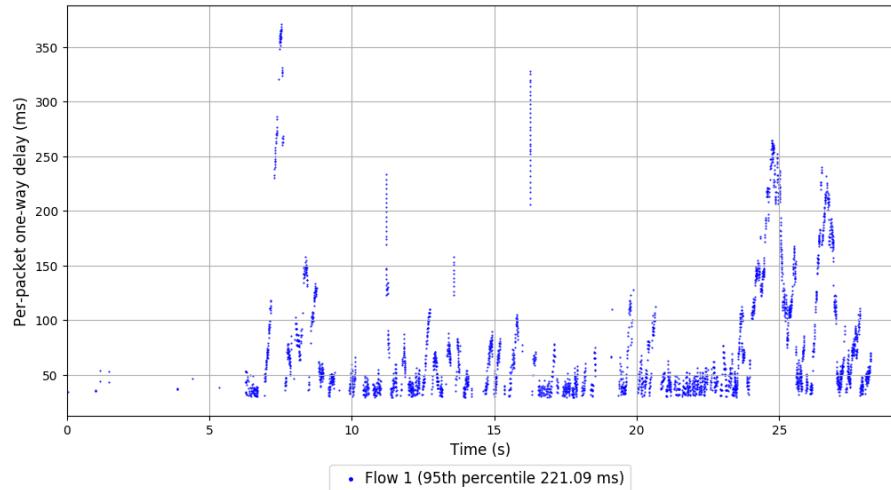
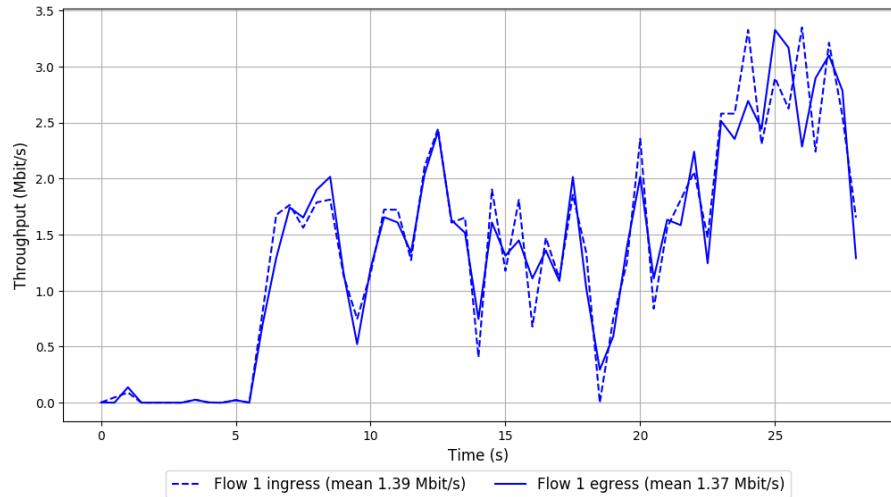


Run 2: Statistics of QUIC Cubic

```
Start at: Tue, 25 Jul 2017 07:03:09 +0000
End at: Tue, 25 Jul 2017 07:03:39 +0000
Local clock offset: 3.173 ms
Remote clock offset: -16.805 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:21 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 221.094 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 221.094 ms
Loss rate: 1.42%
```

Run 2: Report of QUIC Cubic — Data Link

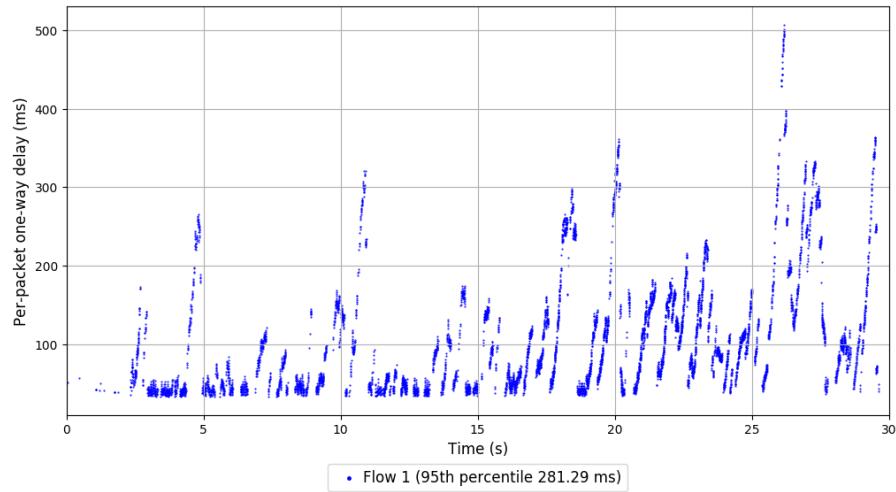
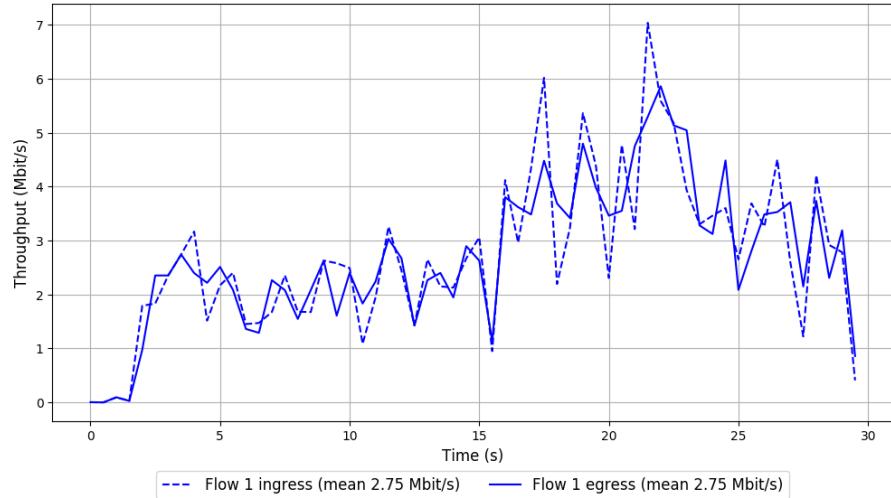


Run 3: Statistics of QUIC Cubic

```
Start at: Tue, 25 Jul 2017 07:19:27 +0000
End at: Tue, 25 Jul 2017 07:19:57 +0000
Local clock offset: 1.019 ms
Remote clock offset: -17.338 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:23 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.75 Mbit/s
95th percentile per-packet one-way delay: 281.287 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 2.75 Mbit/s
95th percentile per-packet one-way delay: 281.287 ms
Loss rate: 0.33%
```

Run 3: Report of QUIC Cubic — Data Link



```
Run 1: Statistics of Saturator
```

```
Start at: Tue, 25 Jul 2017 06:52:14 +0000
```

```
End at: Tue, 25 Jul 2017 06:52:44 +0000
```

```
Local clock offset: 2.019 ms
```

```
Remote clock offset: -18.015 ms
```

```
# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:23 +0000
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 2.29 Mbit/s
```

```
95th percentile per-packet one-way delay: 843.643 ms
```

```
Loss rate: 3.27%
```

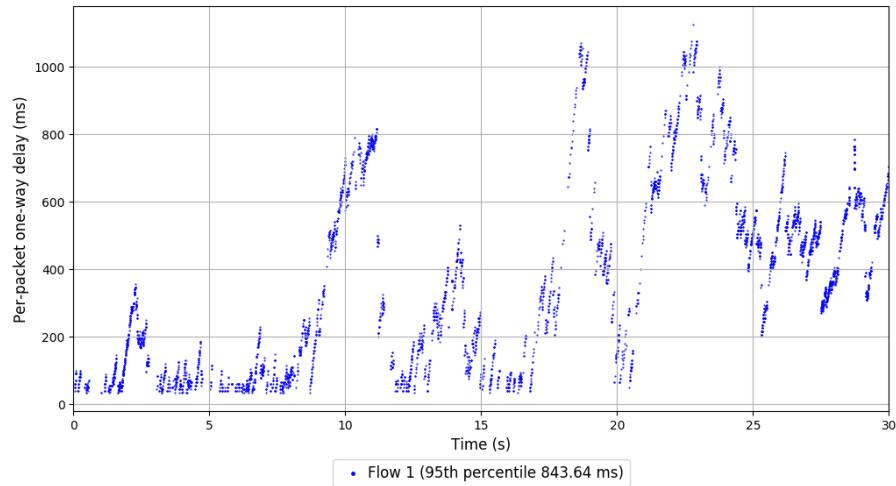
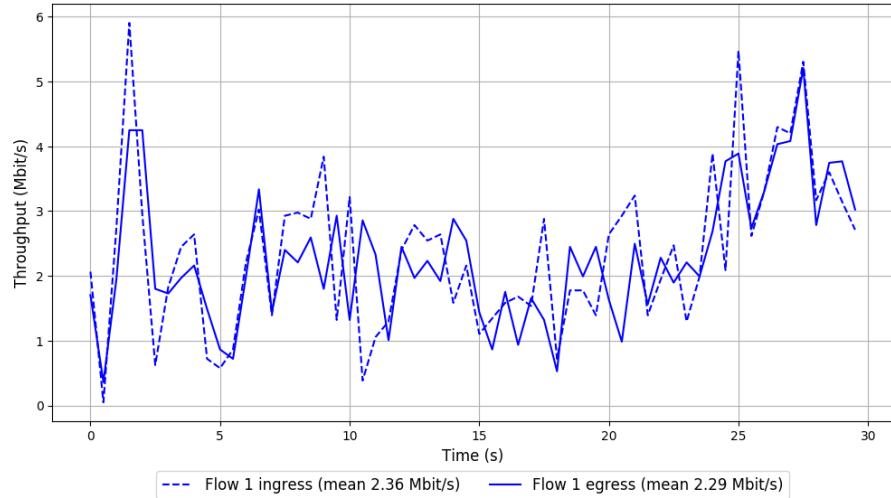
```
-- Flow 1:
```

```
Average throughput: 2.29 Mbit/s
```

```
95th percentile per-packet one-way delay: 843.643 ms
```

```
Loss rate: 3.27%
```

Run 1: Report of Saturator — Data Link

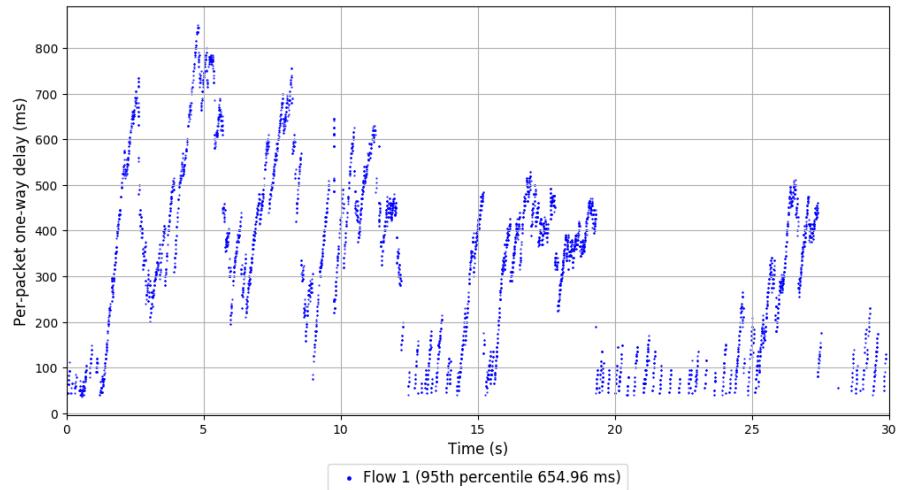
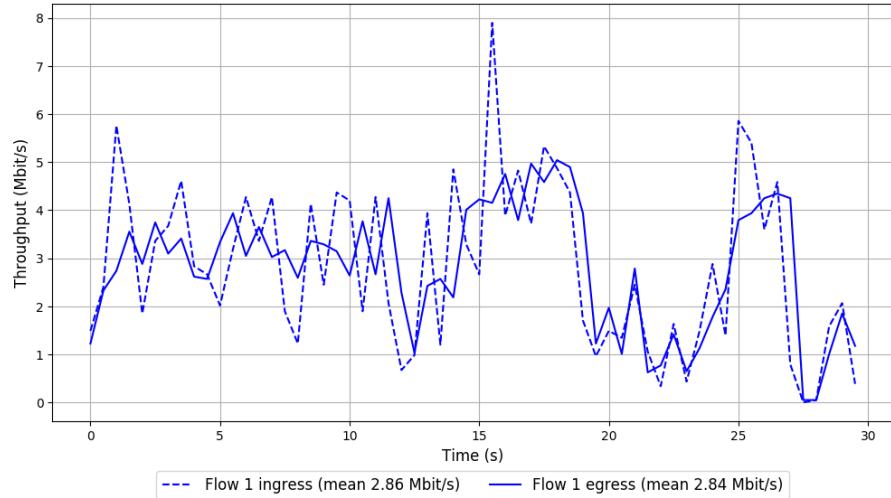


Run 2: Statistics of Saturator

```
Start at: Tue, 25 Jul 2017 07:08:35 +0000
End at: Tue, 25 Jul 2017 07:09:05 +0000
Local clock offset: 0.75 ms
Remote clock offset: -17.792 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:24 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.84 Mbit/s
95th percentile per-packet one-way delay: 654.955 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 2.84 Mbit/s
95th percentile per-packet one-way delay: 654.955 ms
Loss rate: 0.63%
```

Run 2: Report of Saturator — Data Link

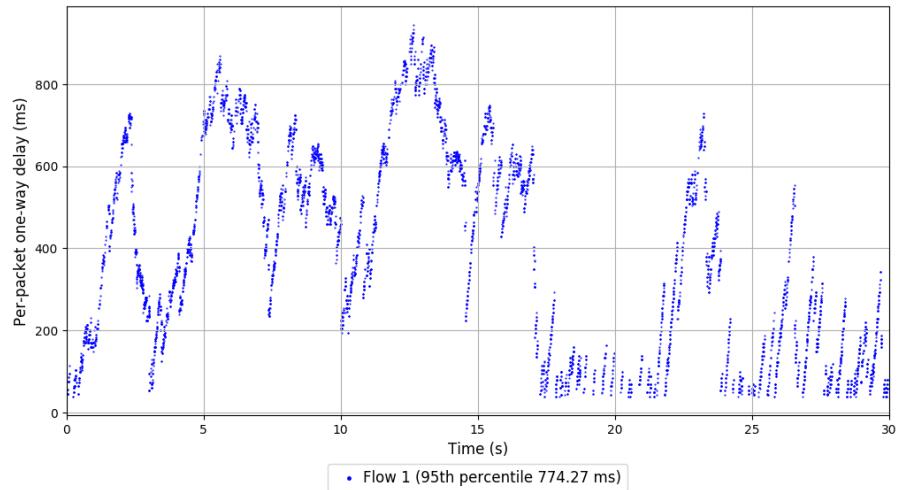
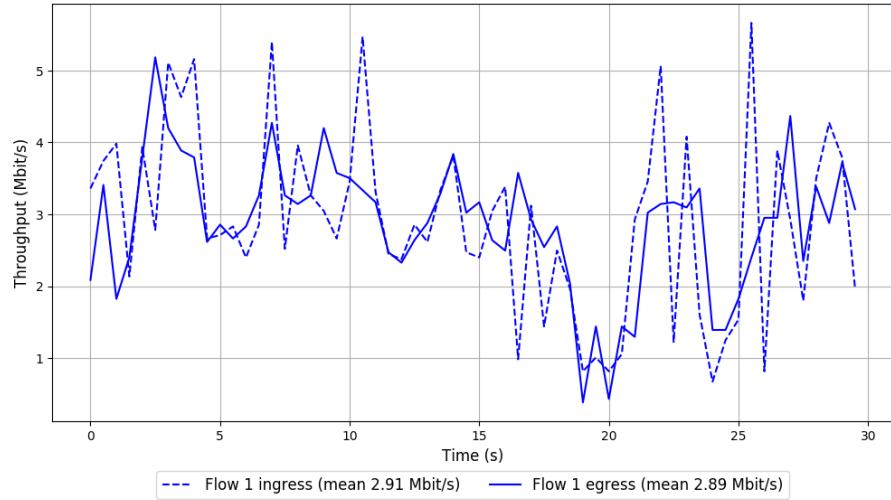


Run 3: Statistics of Saturator

```
Start at: Tue, 25 Jul 2017 07:24:54 +0000
End at: Tue, 25 Jul 2017 07:25:24 +0000
Local clock offset: 1.341 ms
Remote clock offset: -18.303 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:24 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.89 Mbit/s
95th percentile per-packet one-way delay: 774.270 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 2.89 Mbit/s
95th percentile per-packet one-way delay: 774.270 ms
Loss rate: 0.92%
```

Run 3: Report of Saturator — Data Link

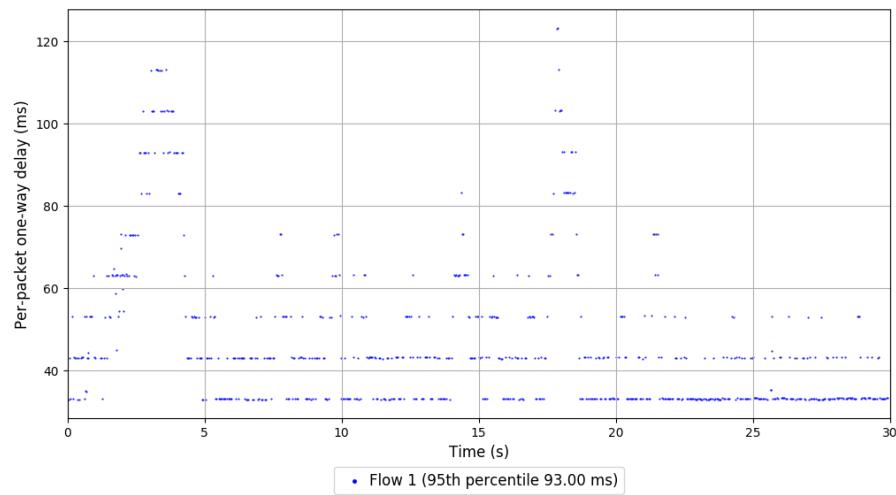
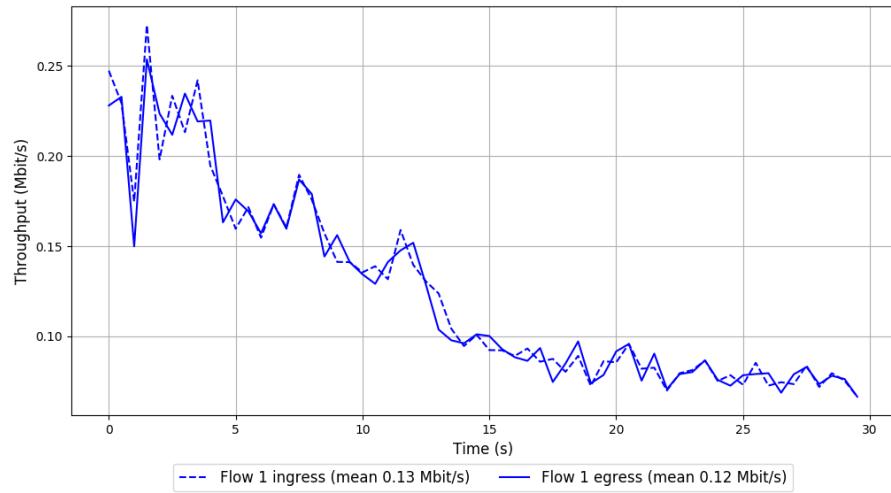


```
Run 1: Statistics of SCReAM
```

```
Start at: Tue, 25 Jul 2017 06:48:57 +0000
End at: Tue, 25 Jul 2017 06:49:27 +0000
Local clock offset: 1.853 ms
Remote clock offset: -16.063 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:25 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 92.998 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 92.998 ms
Loss rate: 0.61%
```

Run 1: Report of SCReAM — Data Link

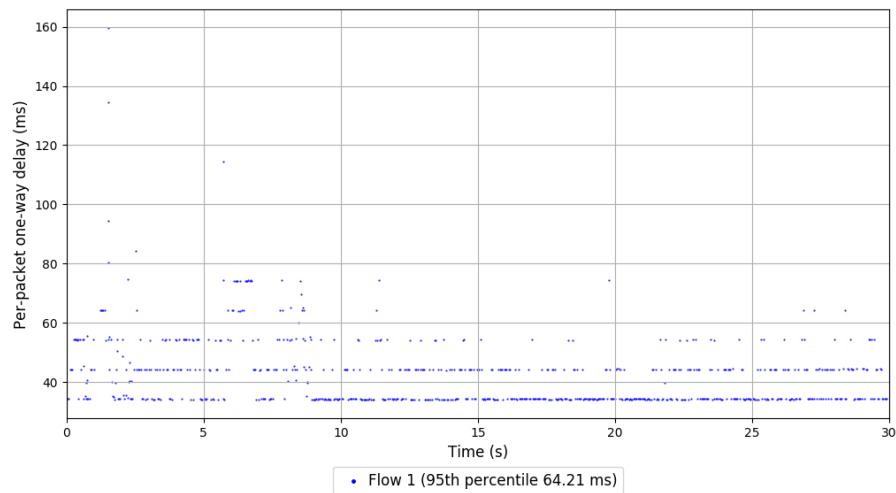
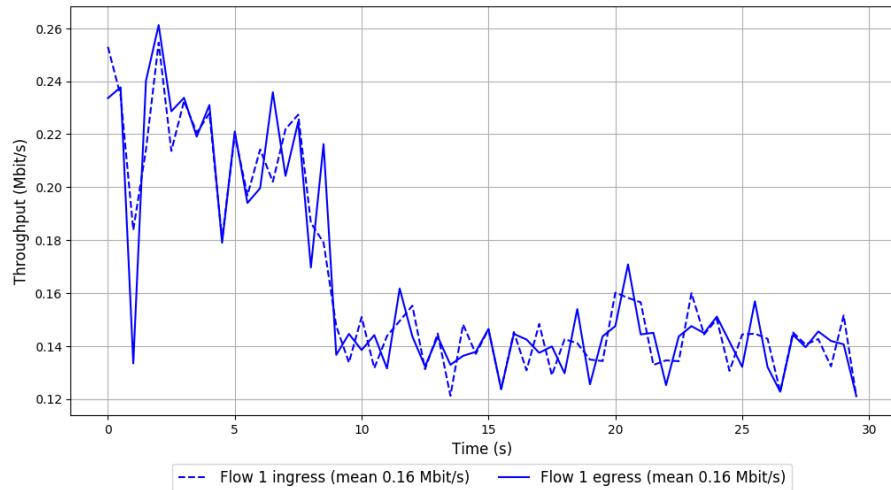


Run 2: Statistics of SCReAM

```
Start at: Tue, 25 Jul 2017 07:05:20 +0000
End at: Tue, 25 Jul 2017 07:05:50 +0000
Local clock offset: 0.138 ms
Remote clock offset: -17.616 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:25 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 64.214 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 64.214 ms
Loss rate: 0.11%
```

Run 2: Report of SCReAM — Data Link

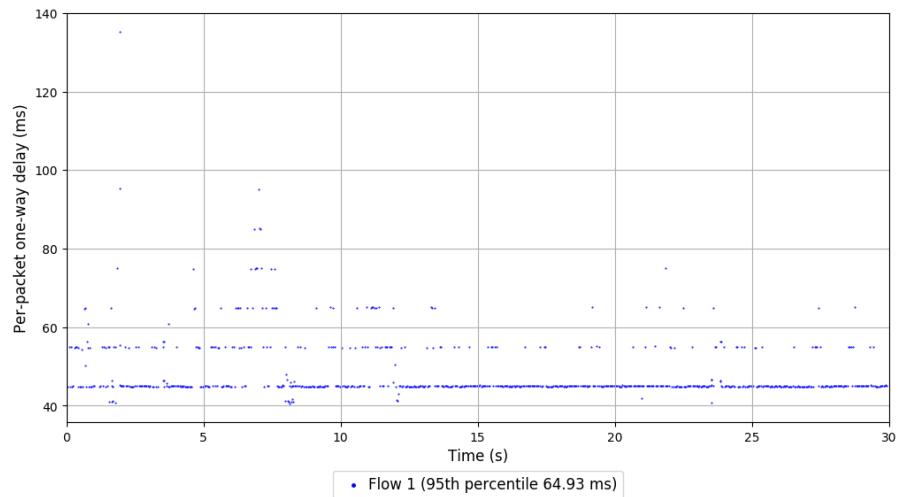
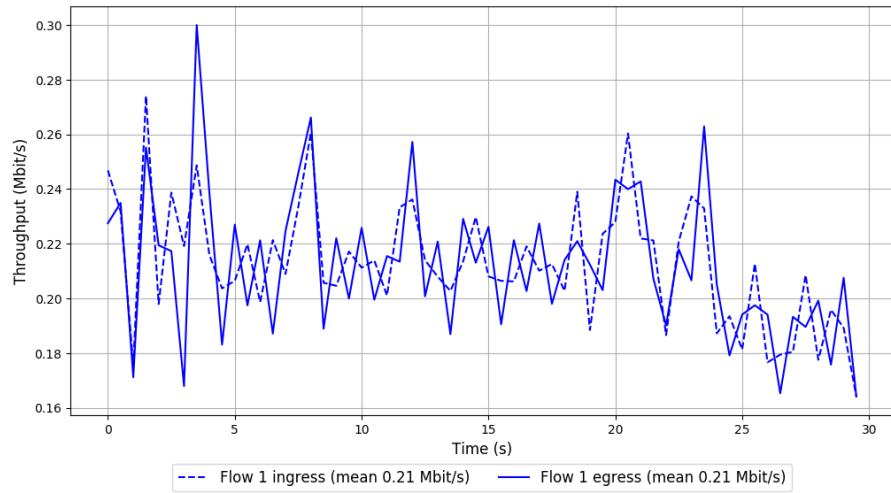


Run 3: Statistics of SCReAM

```
Start at: Tue, 25 Jul 2017 07:21:38 +0000
End at: Tue, 25 Jul 2017 07:22:08 +0000
Local clock offset: -1.396 ms
Remote clock offset: -18.032 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:26 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 64.931 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 64.931 ms
Loss rate: 0.12%
```

Run 3: Report of SCReAM — Data Link

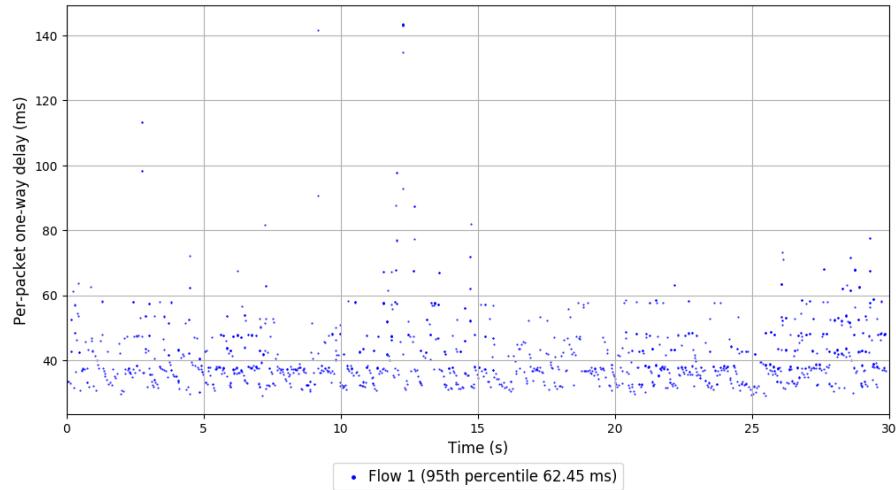
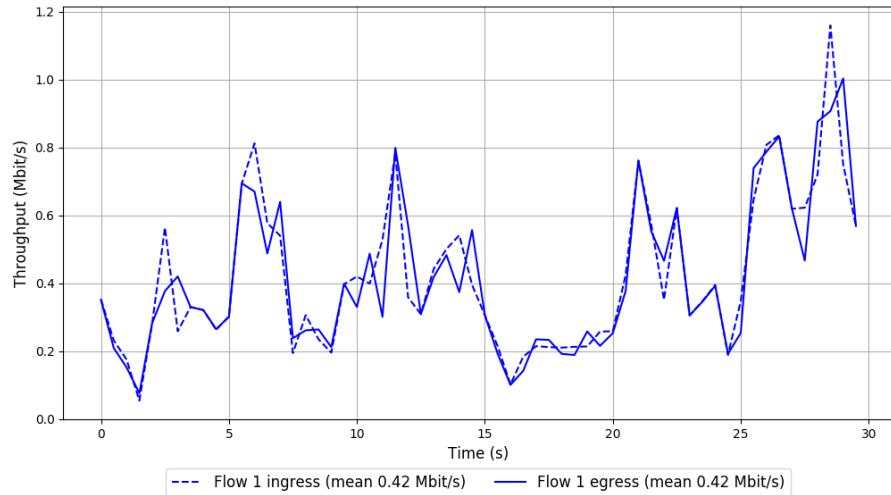


Run 1: Statistics of Sprout

```
Start at: Tue, 25 Jul 2017 06:47:52 +0000
End at: Tue, 25 Jul 2017 06:48:22 +0000
Local clock offset: 1.805 ms
Remote clock offset: -17.29 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:26 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 62.455 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 62.455 ms
Loss rate: 0.92%
```

Run 1: Report of Sprout — Data Link

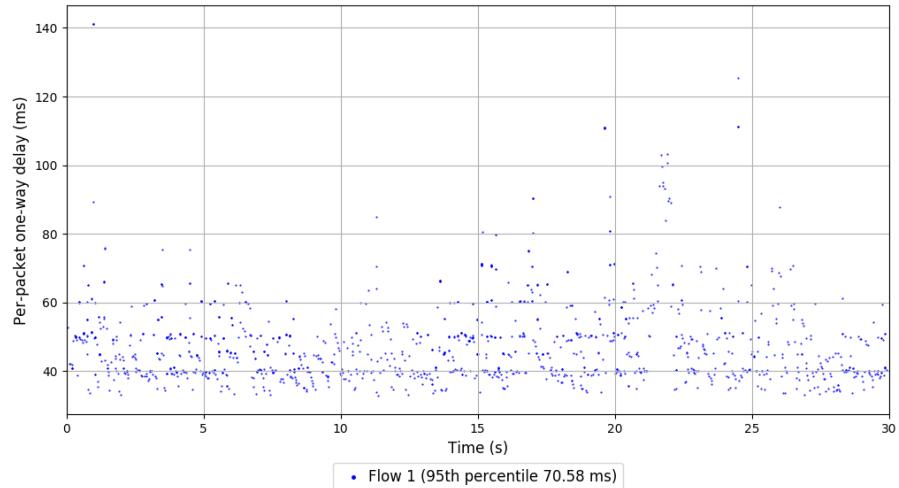
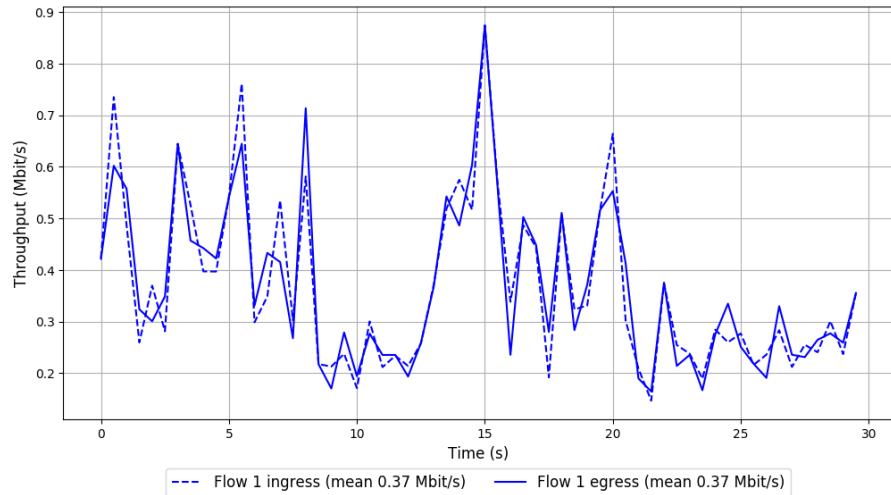


Run 2: Statistics of Sprout

```
Start at: Tue, 25 Jul 2017 07:04:15 +0000
End at: Tue, 25 Jul 2017 07:04:45 +0000
Local clock offset: 0.494 ms
Remote clock offset: -16.367 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:27 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 70.579 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 70.579 ms
Loss rate: 0.01%
```

Run 2: Report of Sprout — Data Link

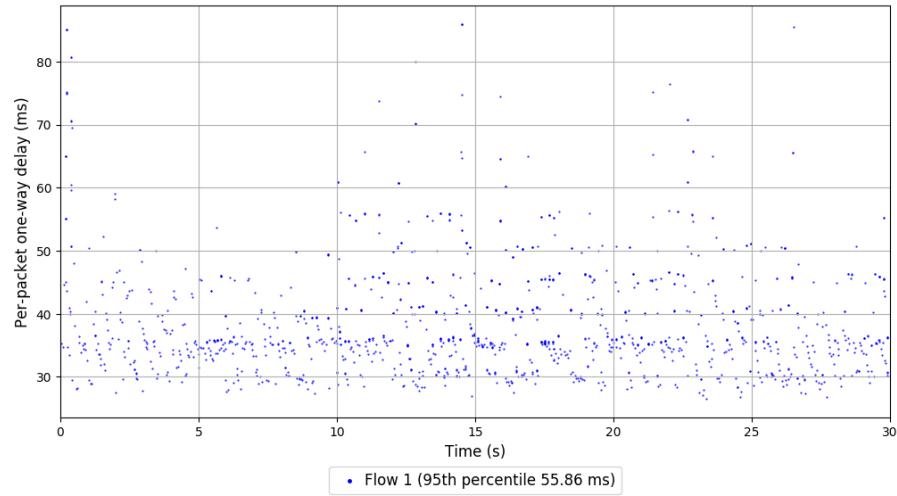
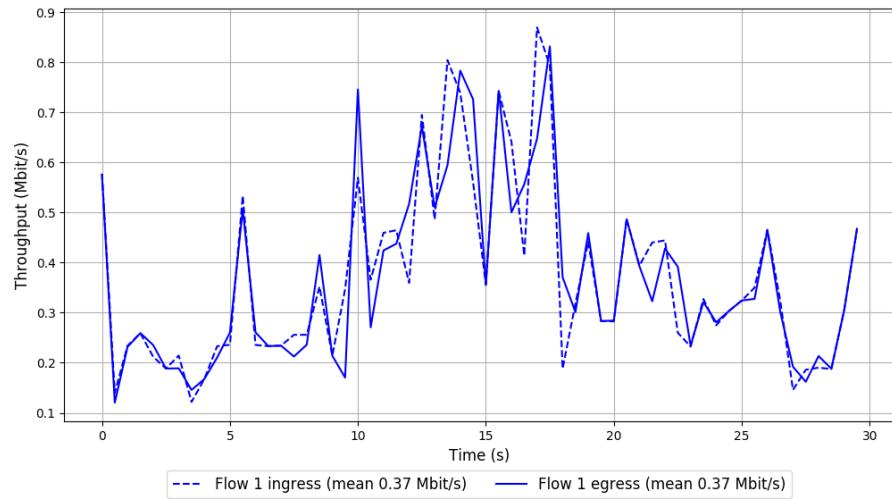


Run 3: Statistics of Sprout

```
Start at: Tue, 25 Jul 2017 07:20:33 +0000
End at: Tue, 25 Jul 2017 07:21:03 +0000
Local clock offset: 0.633 ms
Remote clock offset: -25.837 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 55.862 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 55.862 ms
Loss rate: 0.00%
```

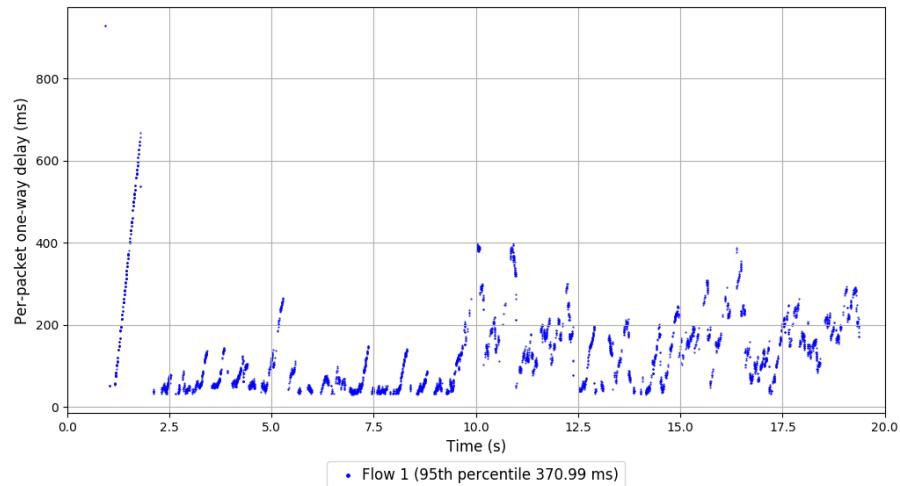
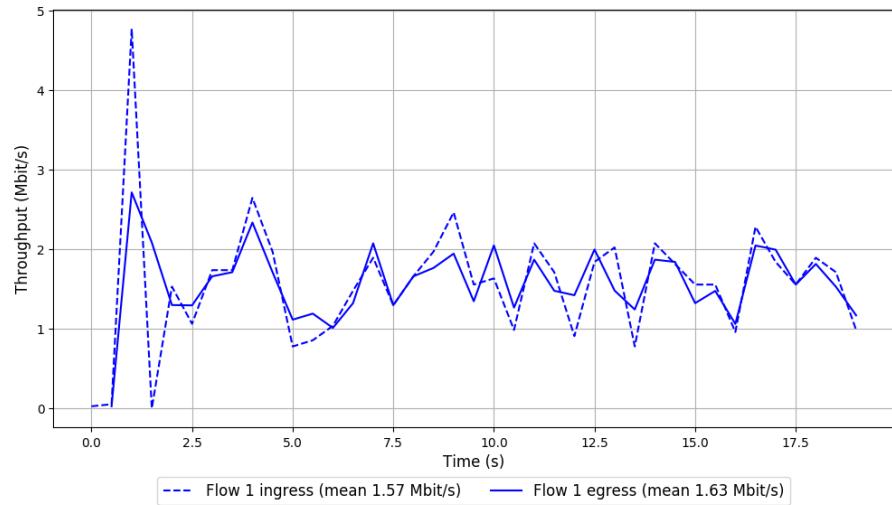
Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: Tue, 25 Jul 2017 06:44:35 +0000
End at: Tue, 25 Jul 2017 06:45:05 +0000
Local clock offset: 1.224 ms
Remote clock offset: -17.769 ms

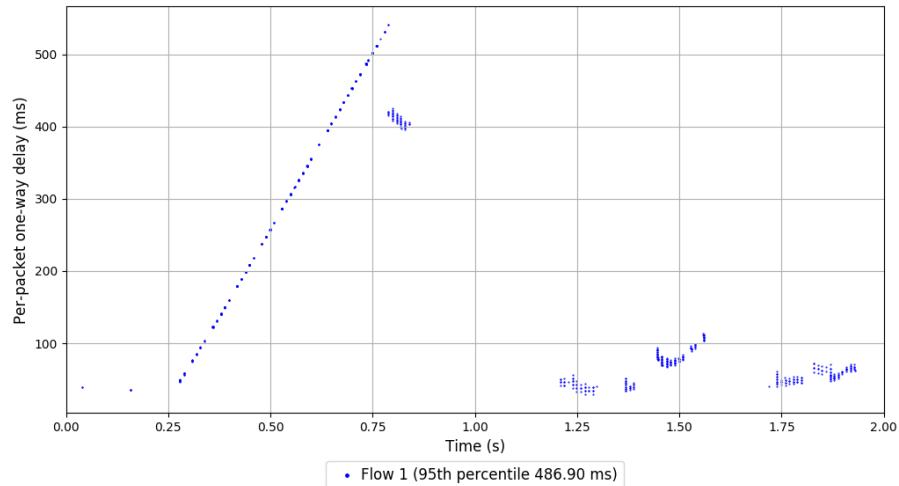
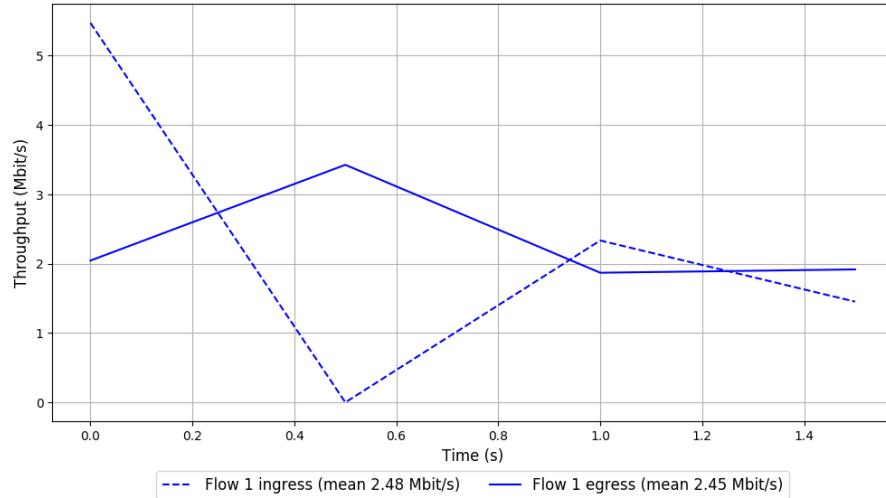
Run 1: Report of TaoVA-100x — Data Link



Run 2: Statistics of TaoVA-100x

Start at: Tue, 25 Jul 2017 07:00:59 +0000
End at: Tue, 25 Jul 2017 07:01:29 +0000
Local clock offset: 3.314 ms
Remote clock offset: -17.722 ms

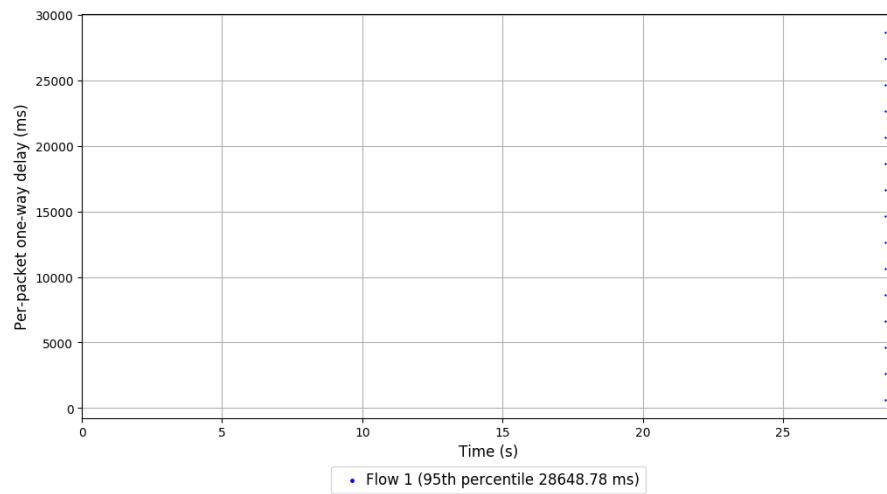
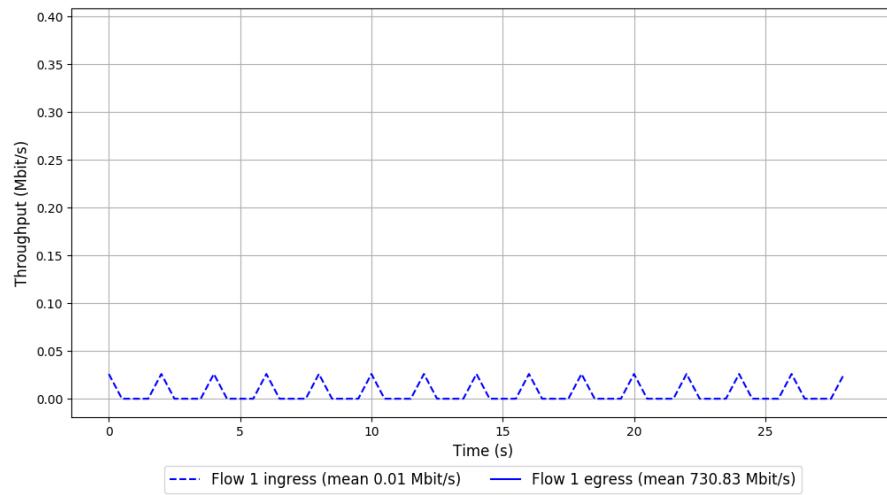
Run 2: Report of TaoVA-100x — Data Link



Run 3: Statistics of TaoVA-100x

Start at: Tue, 25 Jul 2017 07:17:17 +0000
End at: Tue, 25 Jul 2017 07:17:47 +0000
Local clock offset: 0.886 ms
Remote clock offset: -18.056 ms

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

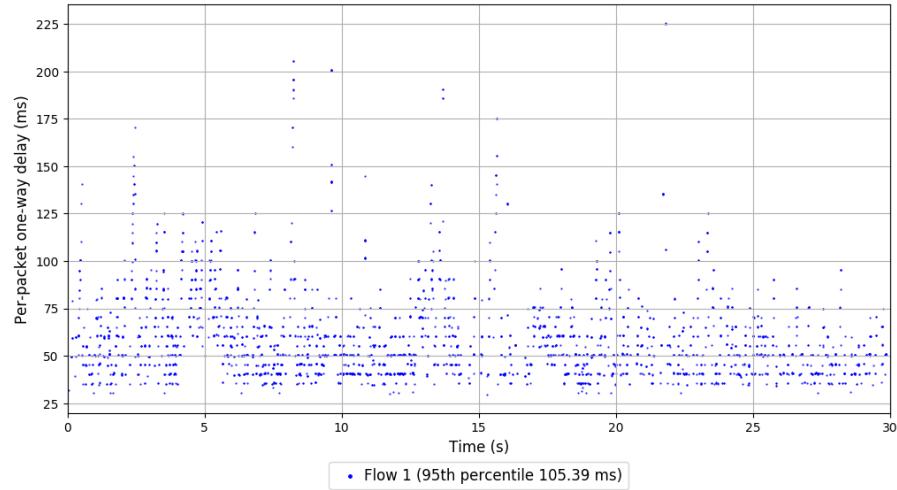
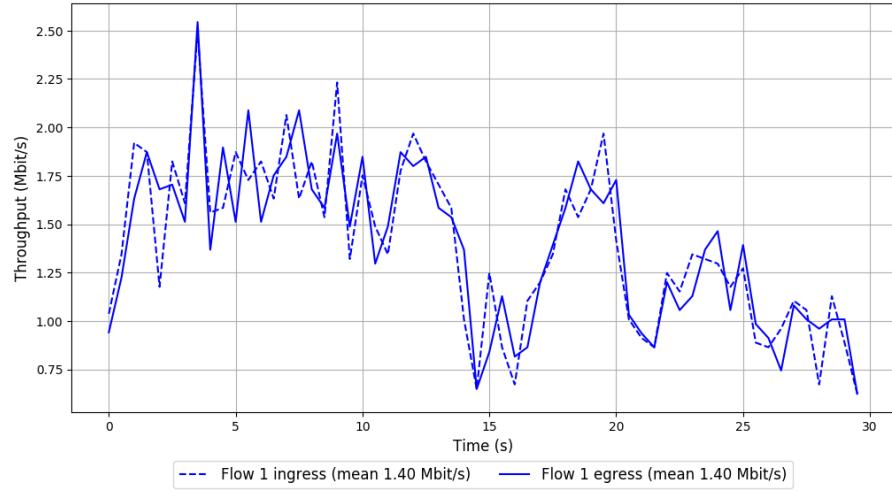


Run 1: Statistics of TCP Vegas

```
Start at: Tue, 25 Jul 2017 06:57:42 +0000
End at: Tue, 25 Jul 2017 06:58:12 +0000
Local clock offset: 0.59 ms
Remote clock offset: -19.535 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 105.391 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 105.391 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Vegas — Data Link

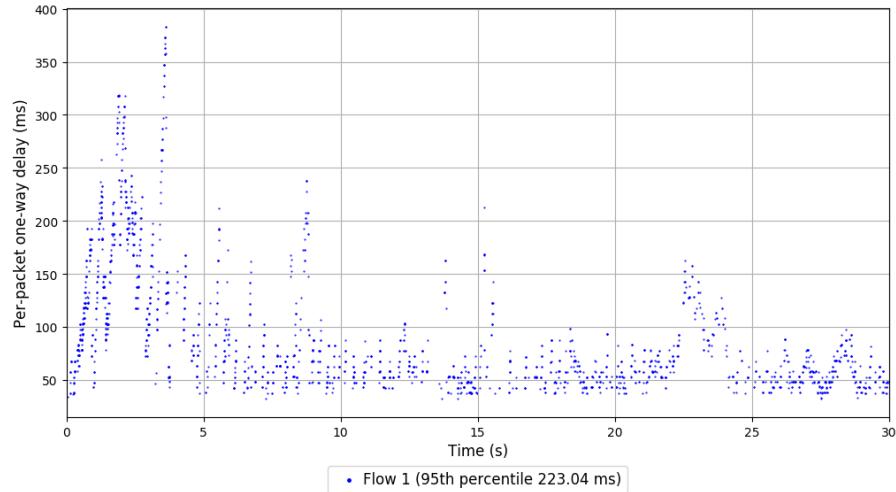
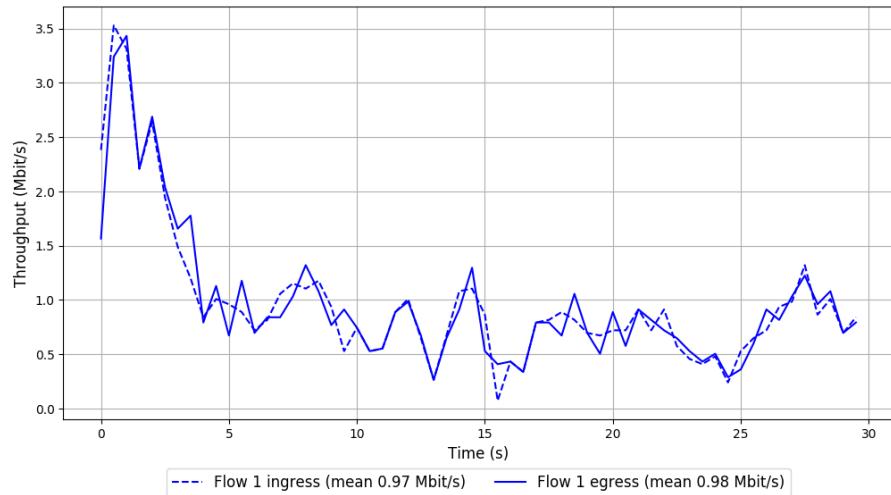


Run 2: Statistics of TCP Vegas

```
Start at: Tue, 25 Jul 2017 07:14:02 +0000
End at: Tue, 25 Jul 2017 07:14:32 +0000
Local clock offset: 0.75 ms
Remote clock offset: -16.977 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:30 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 223.045 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 223.045 ms
Loss rate: 0.16%
```

Run 2: Report of TCP Vegas — Data Link

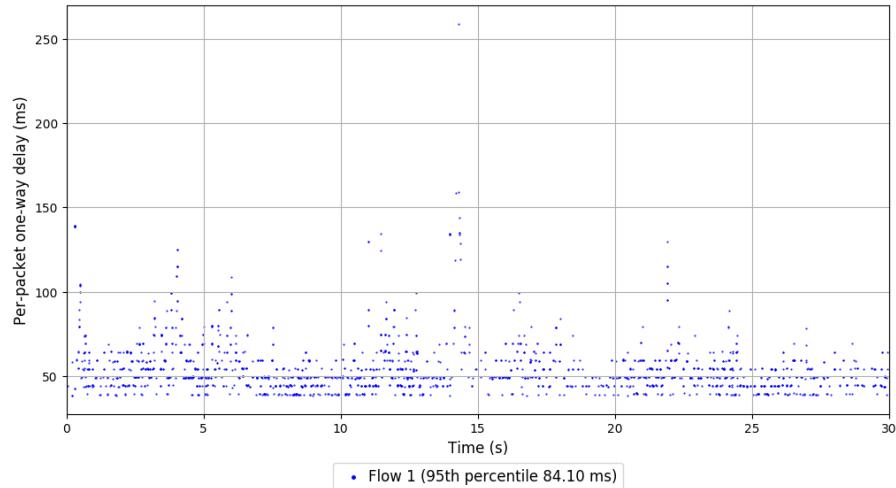
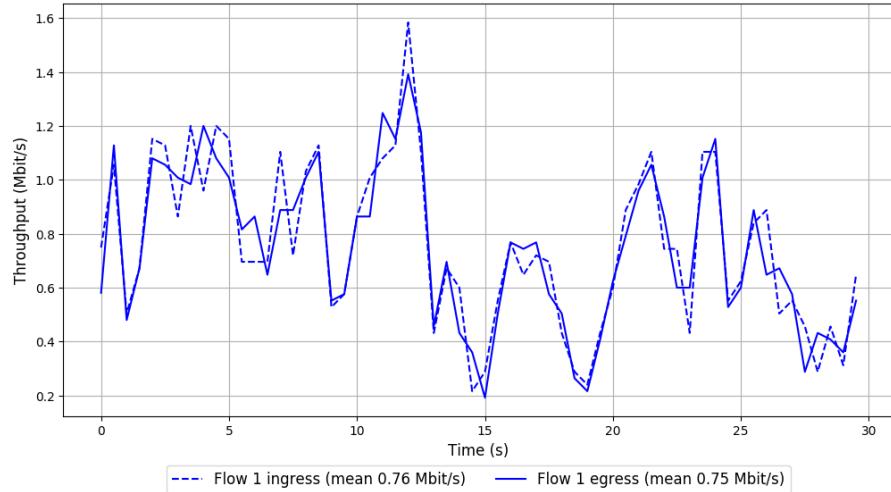


Run 3: Statistics of TCP Vegas

```
Start at: Tue, 25 Jul 2017 07:30:20 +0000
End at: Tue, 25 Jul 2017 07:30:50 +0000
Local clock offset: 0.608 ms
Remote clock offset: -15.805 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:31 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 84.096 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 84.096 ms
Loss rate: 1.27%
```

Run 3: Report of TCP Vegas — Data Link

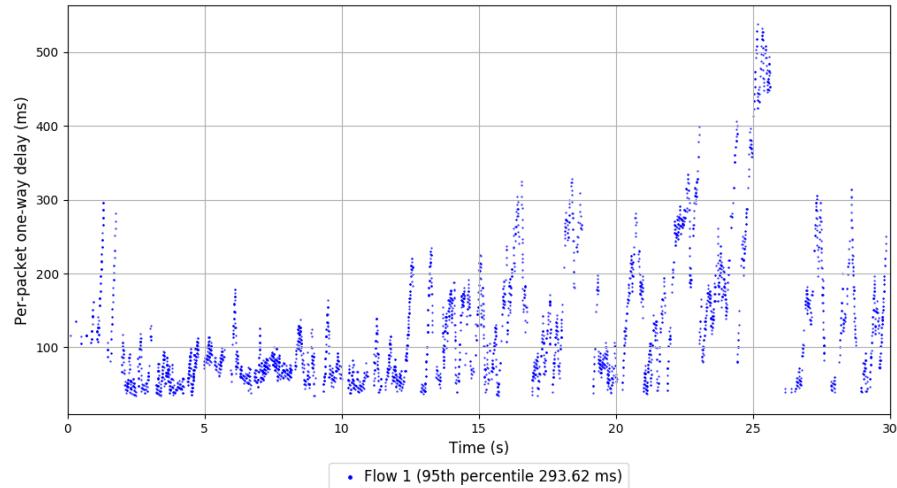
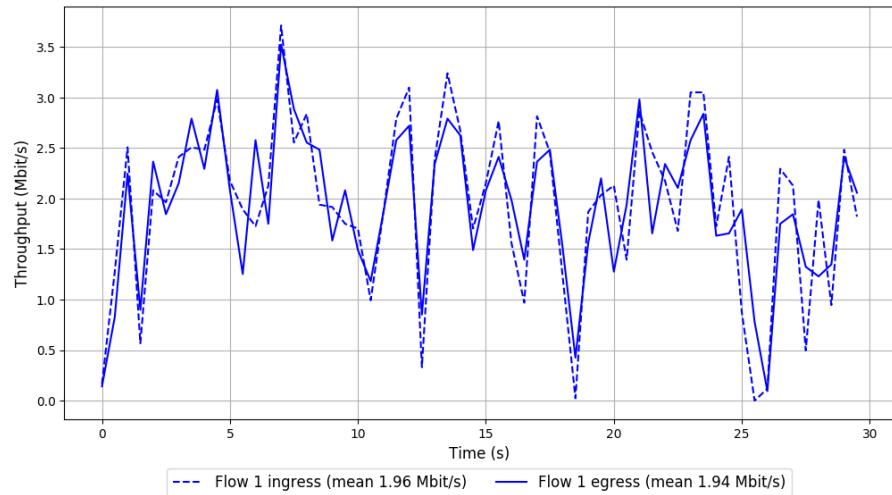


Run 1: Statistics of Verus

```
Start at: Tue, 25 Jul 2017 06:53:19 +0000
End at: Tue, 25 Jul 2017 06:53:49 +0000
Local clock offset: 1.09 ms
Remote clock offset: -16.138 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:32 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 293.616 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 293.616 ms
Loss rate: 0.71%
```

Run 1: Report of Verus — Data Link

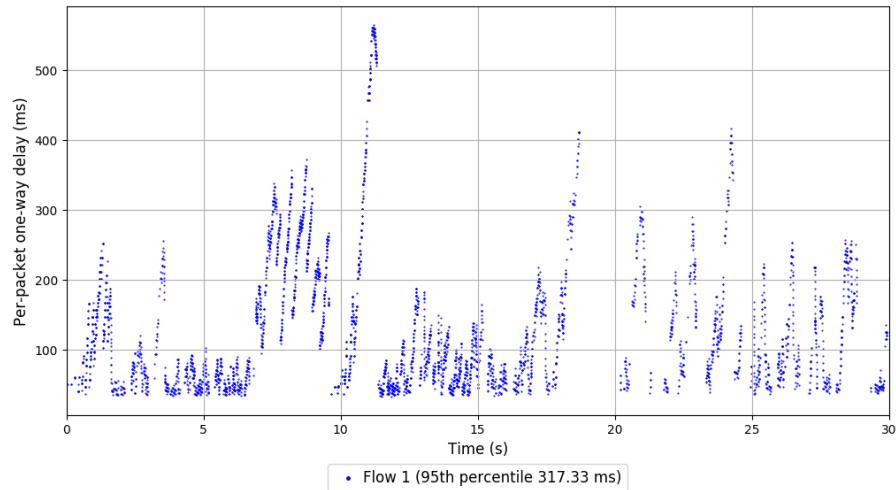
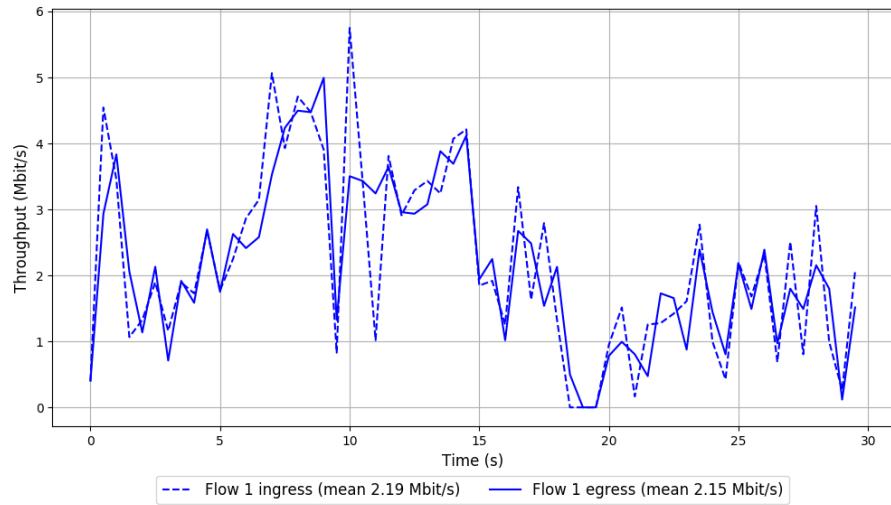


Run 2: Statistics of Verus

```
Start at: Tue, 25 Jul 2017 07:09:41 +0000
End at: Tue, 25 Jul 2017 07:10:11 +0000
Local clock offset: -0.105 ms
Remote clock offset: -17.432 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 317.331 ms
Loss rate: 1.98%
-- Flow 1:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 317.331 ms
Loss rate: 1.98%
```

Run 2: Report of Verus — Data Link

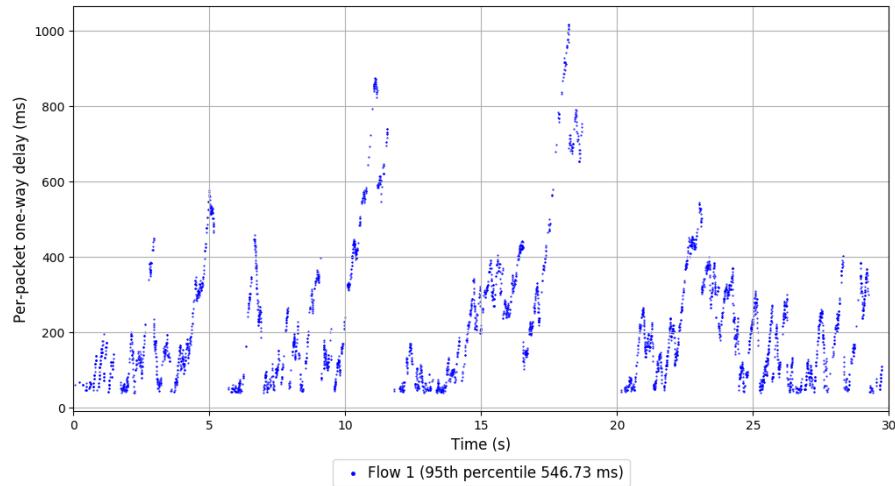
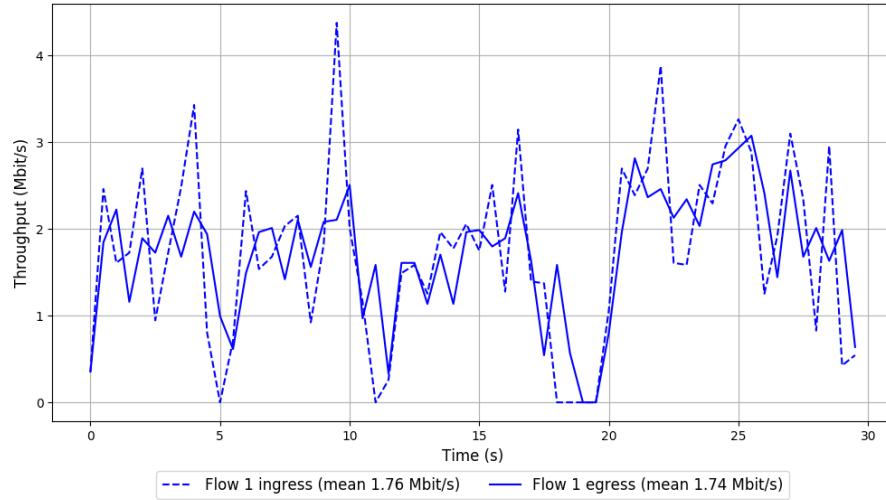


Run 3: Statistics of Verus

```
Start at: Tue, 25 Jul 2017 07:25:59 +0000
End at: Tue, 25 Jul 2017 07:26:29 +0000
Local clock offset: -0.013 ms
Remote clock offset: -17.649 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 546.731 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 546.731 ms
Loss rate: 0.66%
```

Run 3: Report of Verus — Data Link

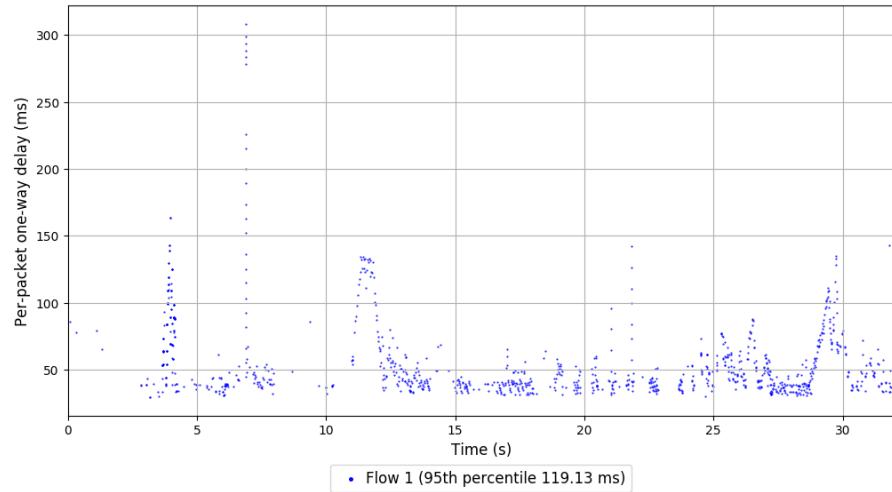
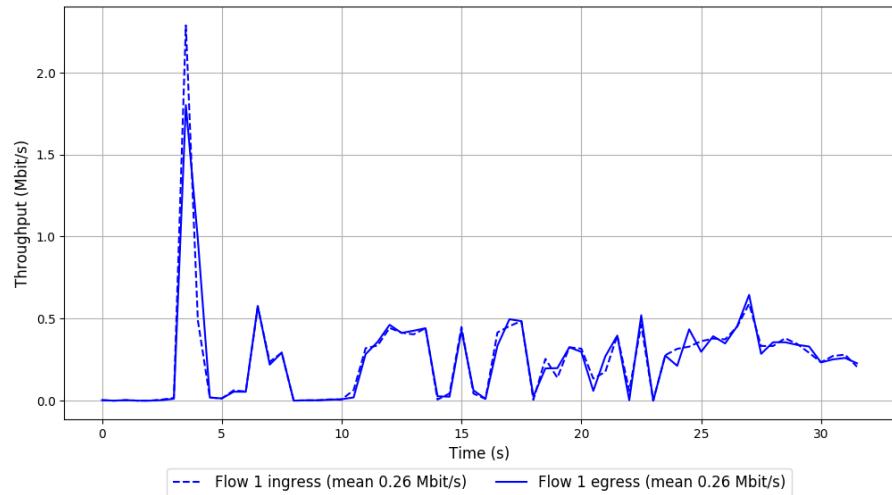


```
Run 1: Statistics of WebRTC media

Start at: Tue, 25 Jul 2017 06:50:02 +0000
End at: Tue, 25 Jul 2017 06:50:32 +0000
Local clock offset: 2.048 ms
Remote clock offset: -16.793 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 119.129 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 119.129 ms
Loss rate: 0.70%
```

Run 1: Report of WebRTC media — Data Link

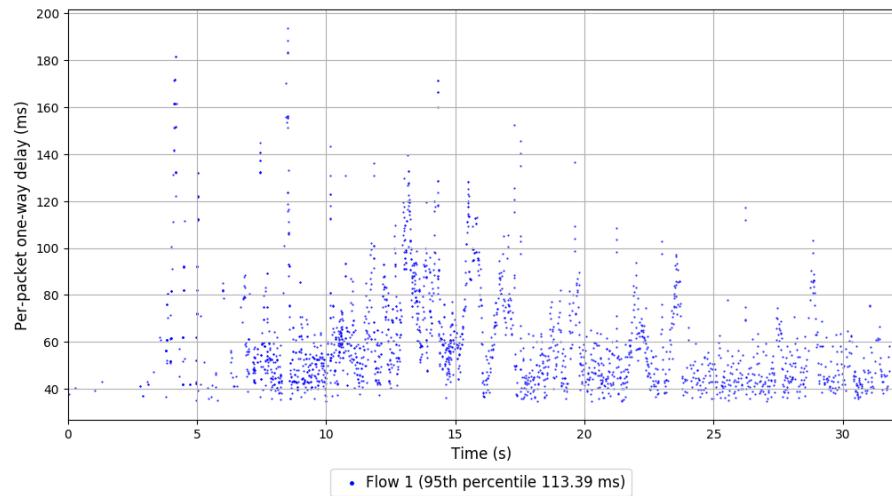
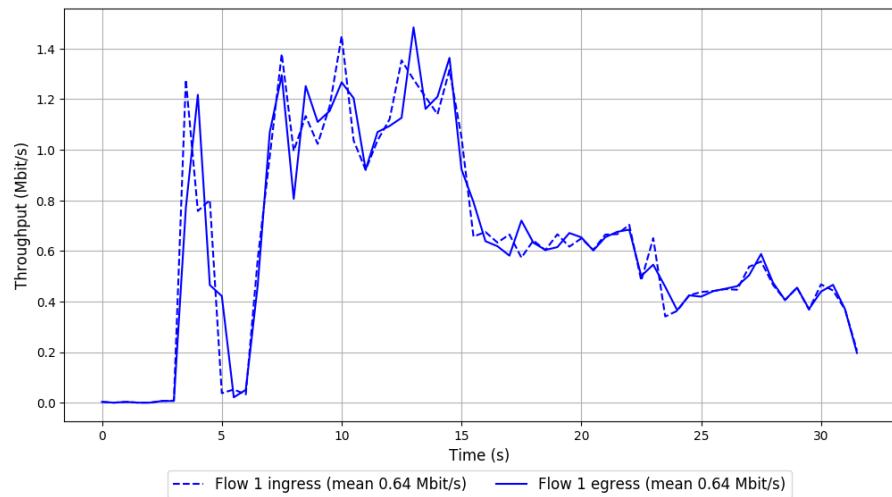


Run 2: Statistics of WebRTC media

```
Start at: Tue, 25 Jul 2017 07:06:25 +0000
End at: Tue, 25 Jul 2017 07:06:55 +0000
Local clock offset: 0.14 ms
Remote clock offset: -16.125 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 113.392 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 113.392 ms
Loss rate: 0.11%
```

Run 2: Report of WebRTC media — Data Link



```
Run 3: Statistics of WebRTC media

Start at: Tue, 25 Jul 2017 07:22:43 +0000
End at: Tue, 25 Jul 2017 07:23:13 +0000
Local clock offset: 0.641 ms
Remote clock offset: -18.544 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:21:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 100.789 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 100.789 ms
Loss rate: 0.45%
```

Run 3: Report of WebRTC media — Data Link

