

Pantheon Summary (Generated at Thu, 13 Jul 2017 21:52:46 +0000 with
pantheon version d7b3554d9e52d3442ab19bc1e1c71f4629d4a0ac)

Repeated the test of 15 congestion control schemes 3 times.

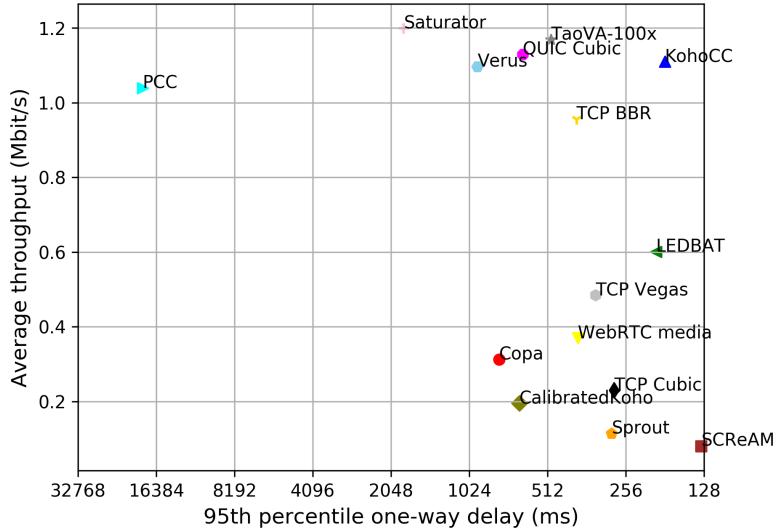
Each test lasted for 30 seconds running 1 flow.

Data path: Colombia ppp0 (*remote*) → AWS Brazil 2 Ethernet (*local*).

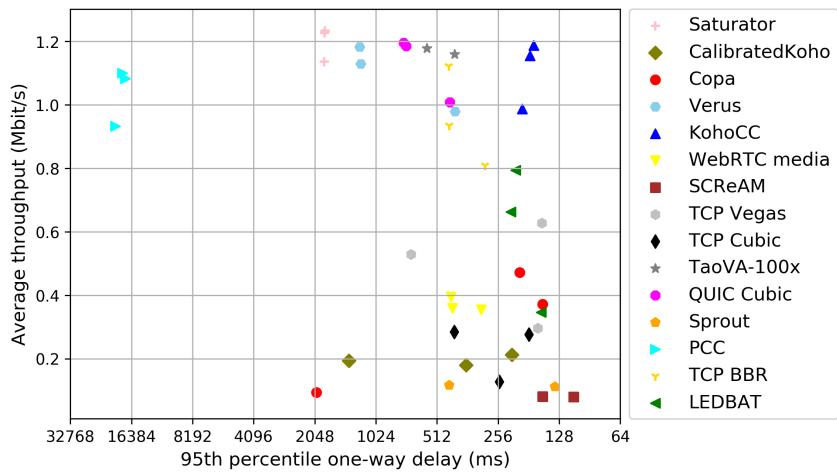
NTP offset measured against gps.ntp.br and has been applied to correct the
timestamps in logs.

```
git branch: master @ d7b3554d9e52d3442ab19bc1e1c71f4629d4a0ac
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 Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme



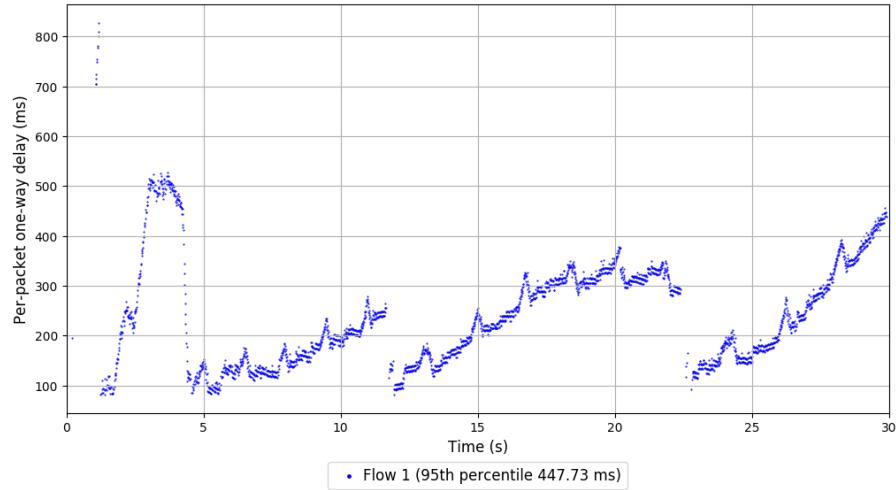
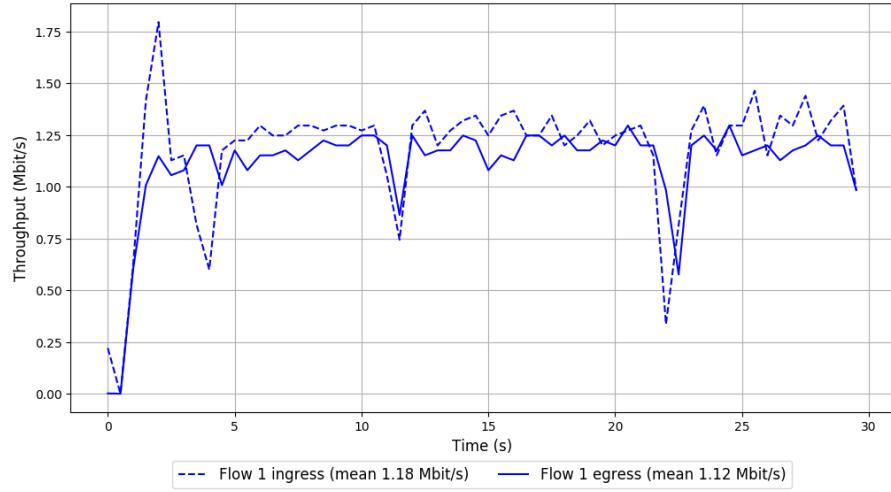
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.96	397.16	10.90
CalibratedKoho	3	0.19	658.66	7.66
Copa	3	0.31	787.42	3.85
TCP Cubic	3	0.23	284.73	8.76
KohoCC	3	1.11	181.41	4.53
LEDBAT	3	0.60	196.31	2.88
PCC	3	1.04	18460.61	96.33
QUIC Cubic	3	1.13	638.85	2.62
Saturator	3	1.20	1834.32	9.30
SCReAM	3	0.08	131.61	1.45
Sprout	3	0.11	290.84	1.50
TaoVA-100x	3	1.17	496.82	2.11
TCP Vegas	3	0.49	335.67	2.49
Verus	3	1.10	953.49	5.45
WebRTC media	3	0.37	392.27	3.27

```
Run 1: Statistics of TCP BBR
```

```
Start at: Thu, 13 Jul 2017 21:04:55 +0000
End at: Thu, 13 Jul 2017 21:05:25 +0000
Local clock offset: 0.836 ms
Remote clock offset: -2.322 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:18 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 447.731 ms
Loss rate: 5.70%
-- Flow 1:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 447.731 ms
Loss rate: 5.70%
```

Run 1: Report of TCP BBR — Data Link

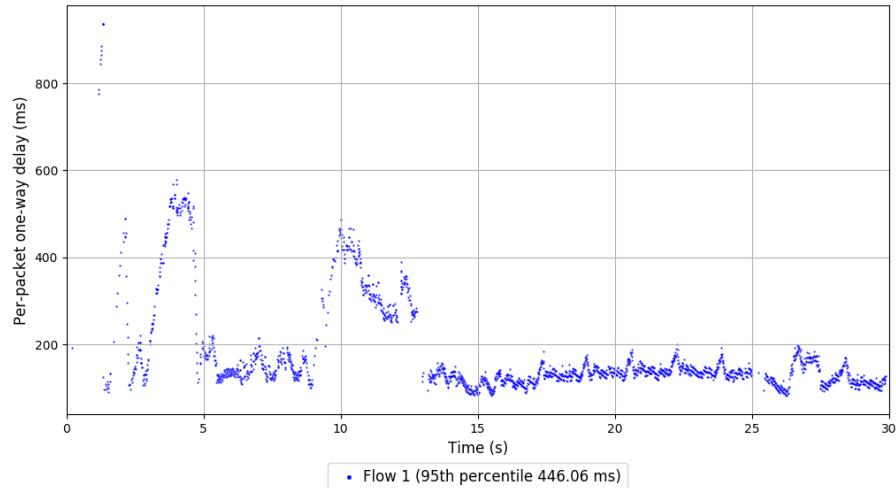
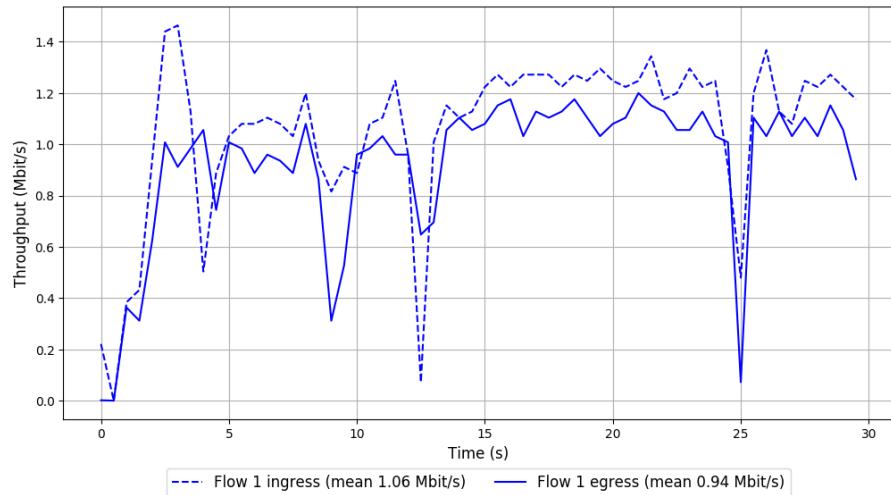


Run 2: Statistics of TCP BBR

```
Start at: Thu, 13 Jul 2017 21:21:34 +0000
End at: Thu, 13 Jul 2017 21:22:04 +0000
Local clock offset: 0.809 ms
Remote clock offset: -1.116 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:18 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 446.063 ms
Loss rate: 12.55%
-- Flow 1:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 446.063 ms
Loss rate: 12.55%
```

Run 2: Report of TCP BBR — Data Link

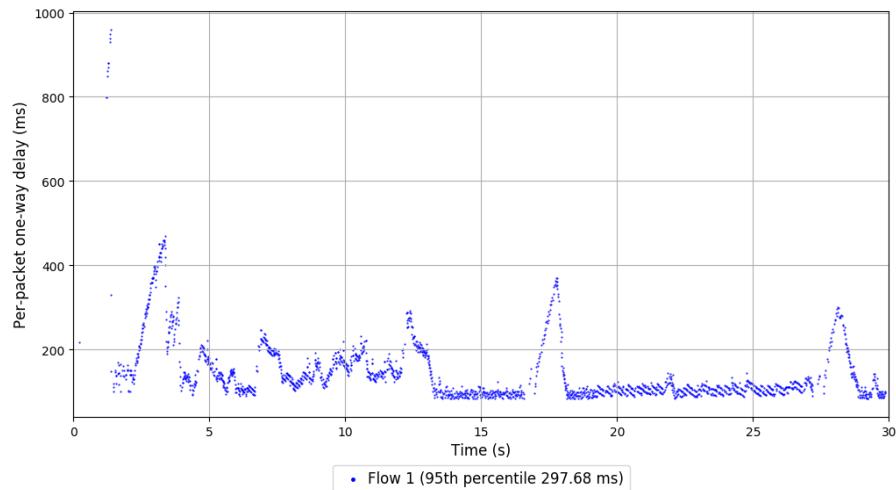
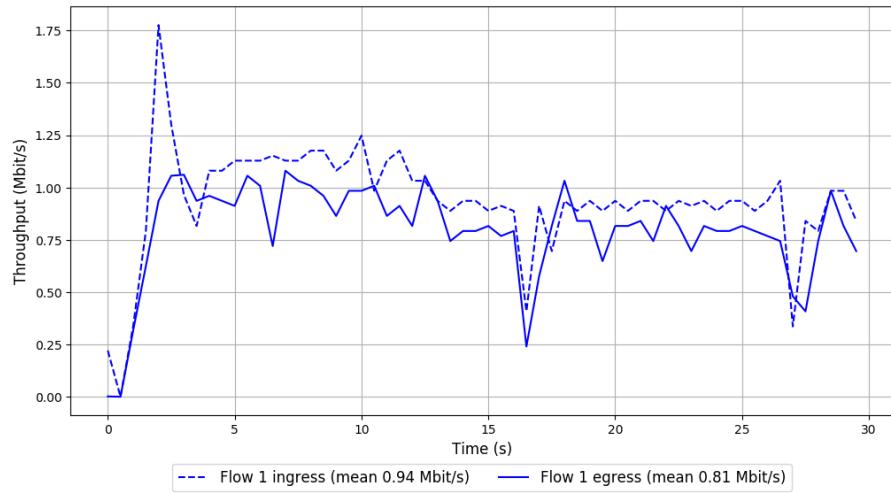


Run 3: Statistics of TCP BBR

```
Start at: Thu, 13 Jul 2017 21:38:13 +0000
End at: Thu, 13 Jul 2017 21:38:43 +0000
Local clock offset: 0.799 ms
Remote clock offset: -0.458 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:19 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 297.681 ms
Loss rate: 14.46%
-- Flow 1:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 297.681 ms
Loss rate: 14.46%
```

Run 3: Report of TCP BBR — Data Link



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

```
Start at: Thu, 13 Jul 2017 21:06:02 +0000
```

```
End at: Thu, 13 Jul 2017 21:06:32 +0000
```

```
Local clock offset: 0.795 ms
```

```
Remote clock offset: -2.67 ms
```

```
# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:19 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 0.21 Mbit/s
```

```
95th percentile per-packet one-way delay: 218.995 ms
```

```
Loss rate: 5.00%
```

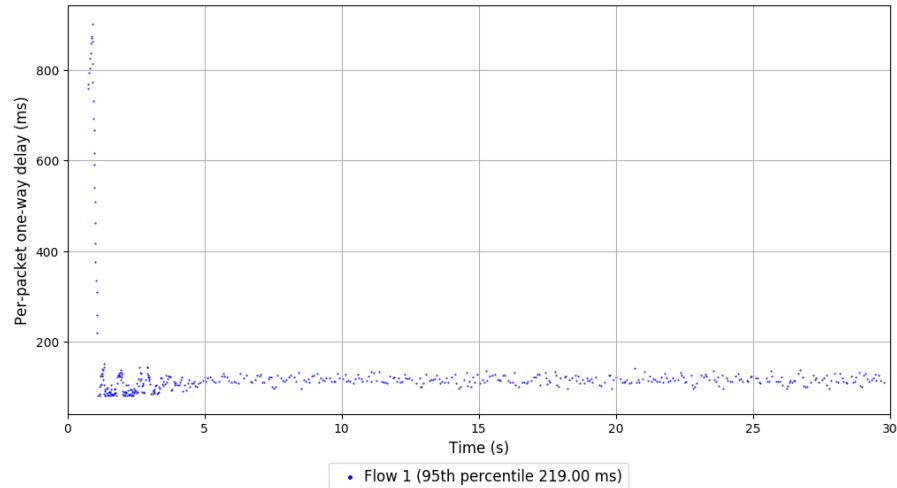
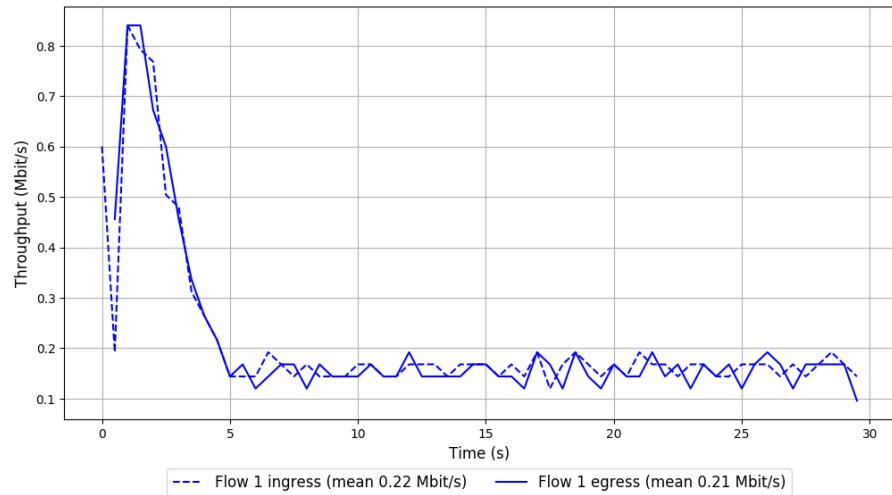
```
-- Flow 1:
```

```
Average throughput: 0.21 Mbit/s
```

```
95th percentile per-packet one-way delay: 218.995 ms
```

```
Loss rate: 5.00%
```

Run 1: Report of CalibratedKoho — Data Link

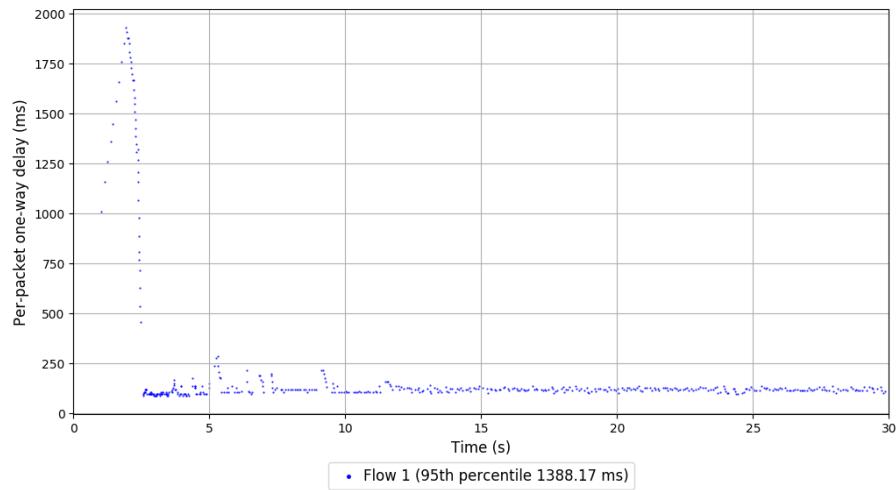
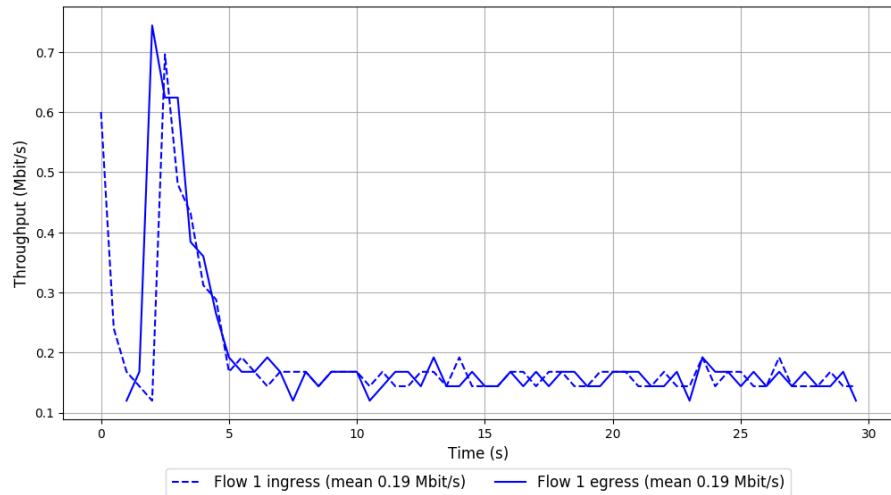


```
Run 2: Statistics of CalibratedKoho
```

```
Start at: Thu, 13 Jul 2017 21:22:41 +0000
End at: Thu, 13 Jul 2017 21:23:11 +0000
Local clock offset: 0.821 ms
Remote clock offset: -1.541 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:20 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 1388.172 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 1388.172 ms
Loss rate: 2.11%
```

Run 2: Report of CalibratedKoho — Data Link

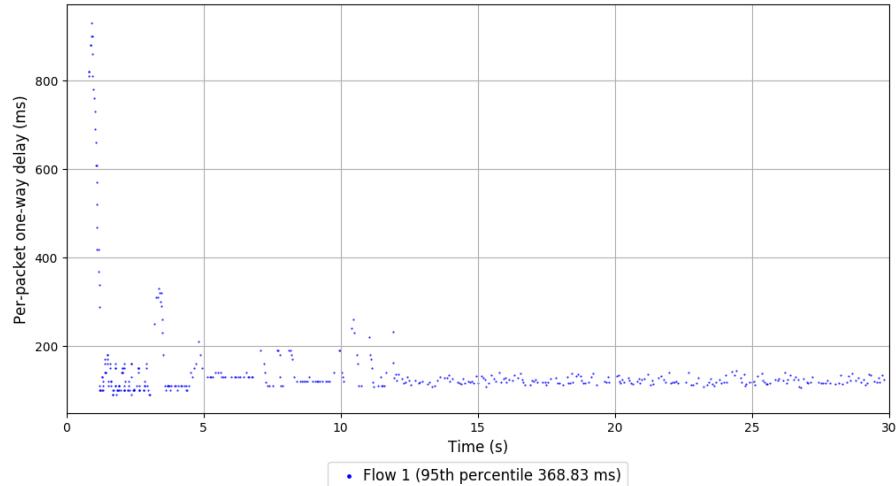
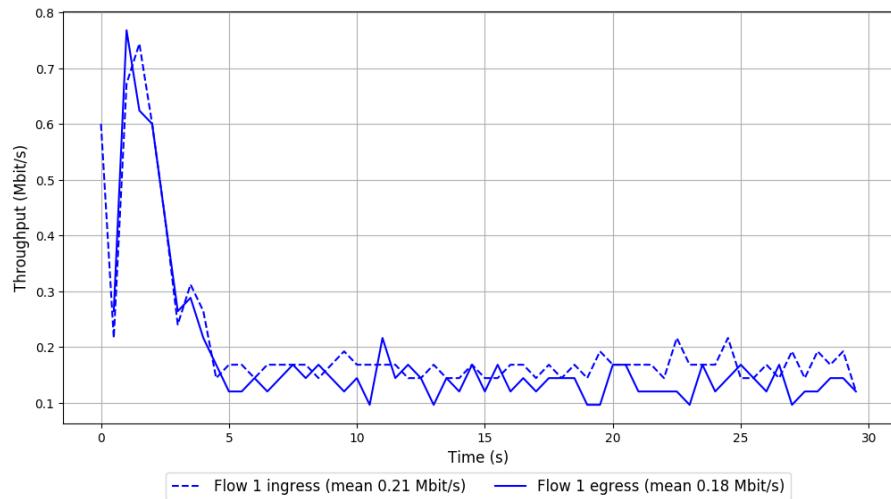


```
Run 3: Statistics of CalibratedKoho
```

```
Start at: Thu, 13 Jul 2017 21:39:20 +0000
End at: Thu, 13 Jul 2017 21:39:50 +0000
Local clock offset: 0.744 ms
Remote clock offset: -0.118 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:20 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 368.826 ms
Loss rate: 15.86%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 368.826 ms
Loss rate: 15.86%
```

Run 3: Report of CalibratedKoho — Data Link

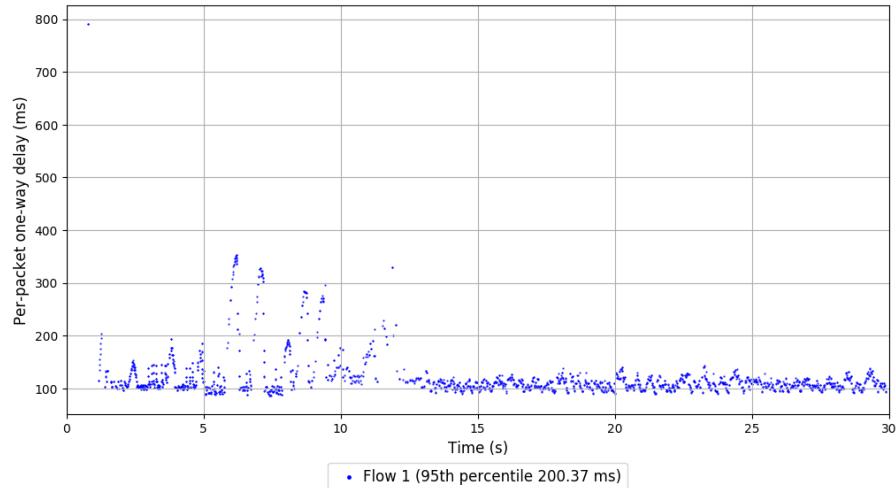
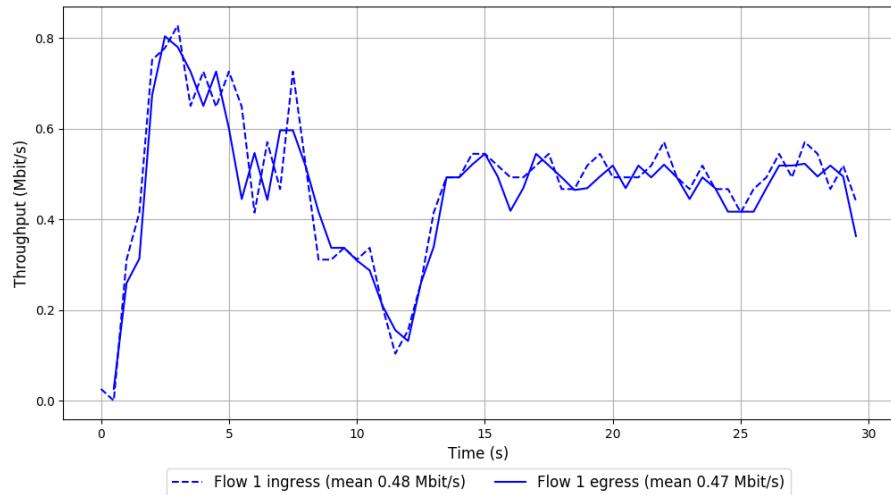


Run 1: Statistics of Copa

```
Start at: Thu, 13 Jul 2017 21:11:35 +0000
End at: Thu, 13 Jul 2017 21:12:05 +0000
Local clock offset: 0.908 ms
Remote clock offset: -1.592 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:21 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 200.372 ms
Loss rate: 3.69%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 200.372 ms
Loss rate: 3.69%
```

Run 1: Report of Copa — Data Link

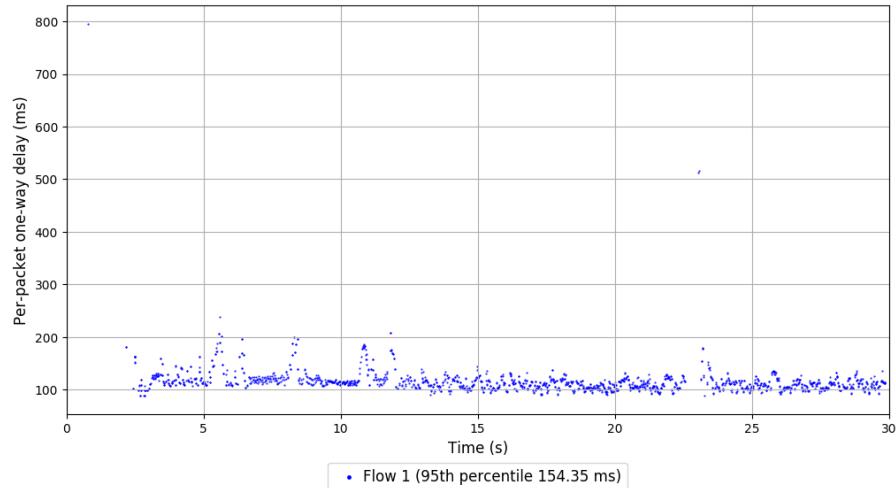
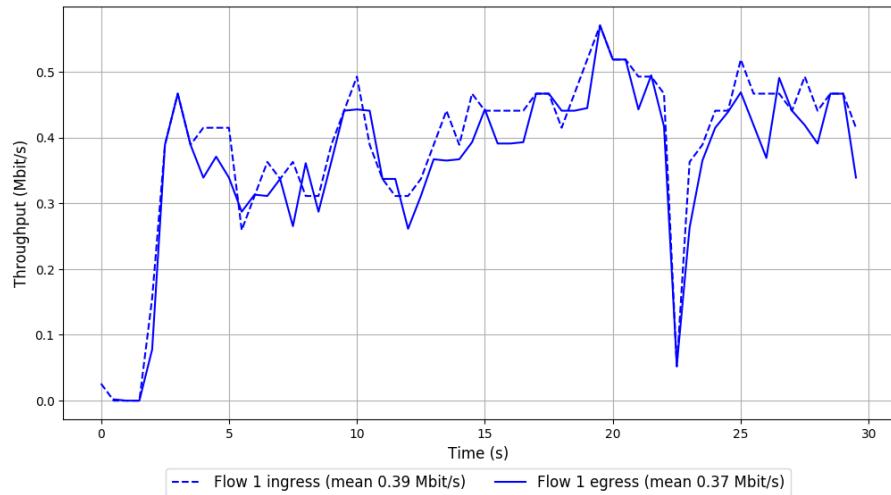


Run 2: Statistics of Copa

```
Start at: Thu, 13 Jul 2017 21:28:14 +0000
End at: Thu, 13 Jul 2017 21:28:44 +0000
Local clock offset: 0.744 ms
Remote clock offset: -1.193 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:21 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 154.347 ms
Loss rate: 6.48%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 154.347 ms
Loss rate: 6.48%
```

Run 2: Report of Copa — Data Link

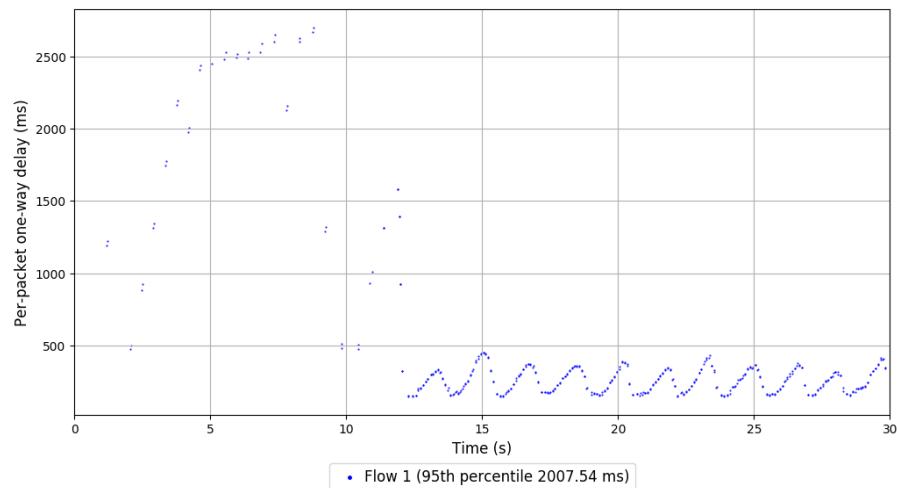
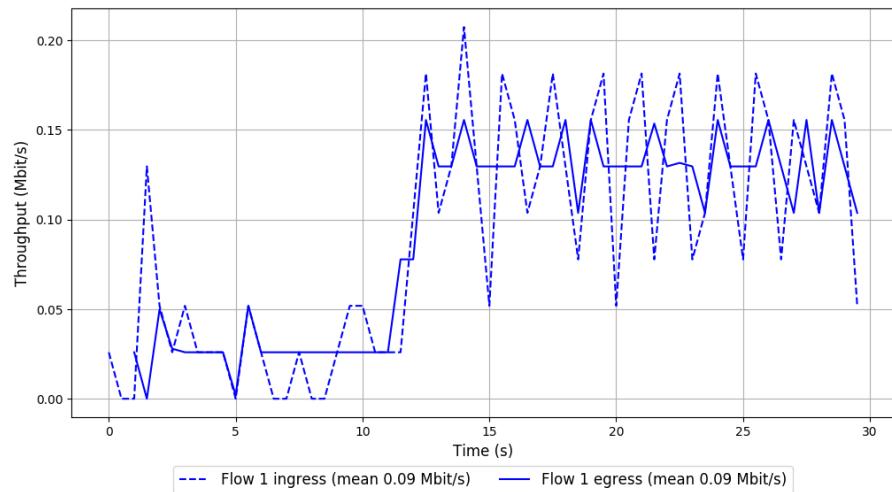


Run 3: Statistics of Copa

```
Start at: Thu, 13 Jul 2017 21:44:53 +0000
End at: Thu, 13 Jul 2017 21:45:23 +0000
Local clock offset: 0.776 ms
Remote clock offset: -0.121 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:22 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 2007.542 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 2007.542 ms
Loss rate: 1.39%
```

Run 3: Report of Copa — Data Link

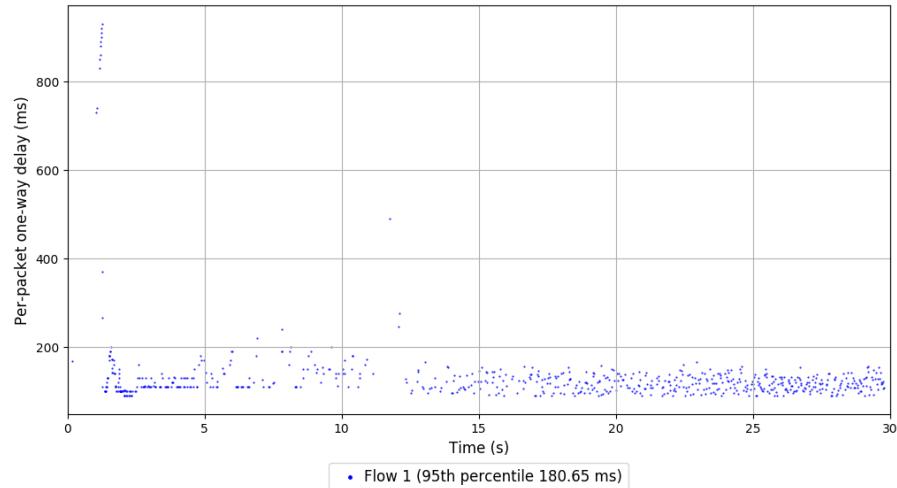
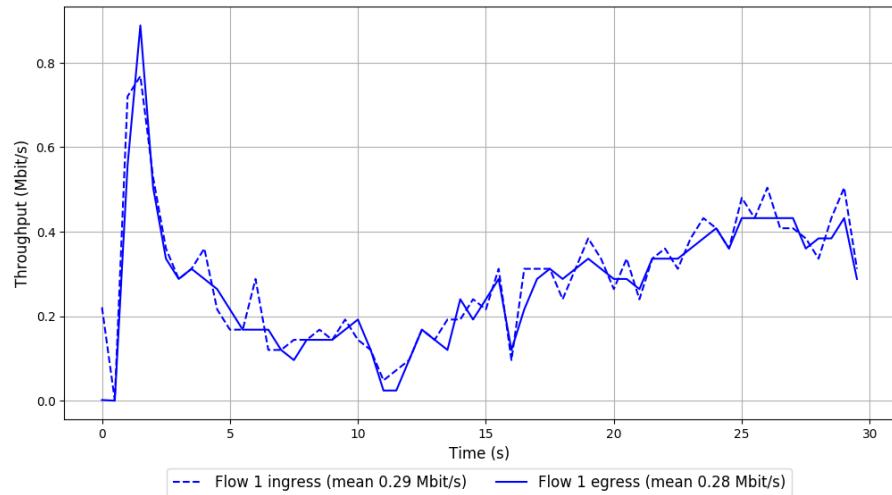


Run 1: Statistics of TCP Cubic

```
Start at: Thu, 13 Jul 2017 21:07:09 +0000
End at: Thu, 13 Jul 2017 21:07:39 +0000
Local clock offset: 0.89 ms
Remote clock offset: -2.38 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:22 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 180.648 ms
Loss rate: 5.41%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 180.648 ms
Loss rate: 5.41%
```

Run 1: Report of TCP Cubic — Data Link

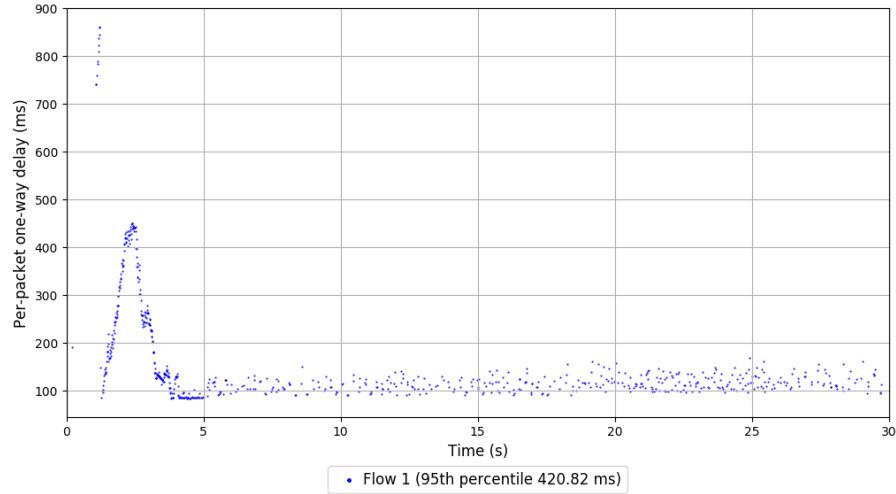
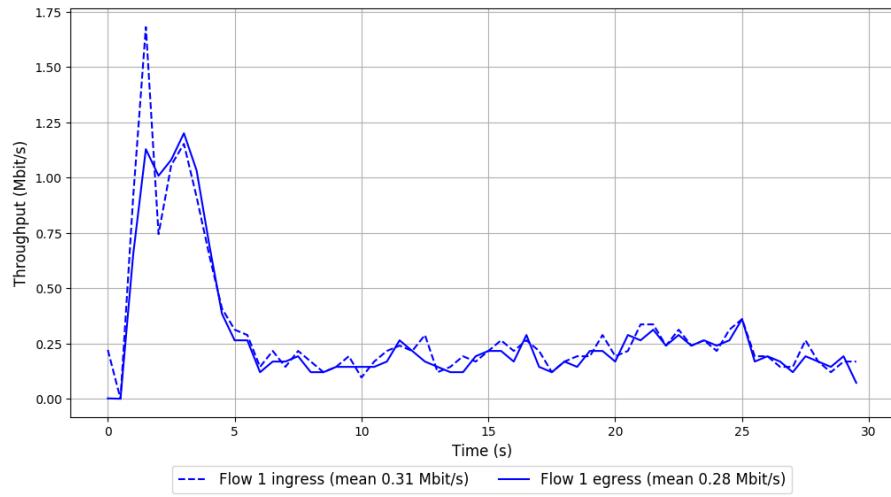


Run 2: Statistics of TCP Cubic

```
Start at: Thu, 13 Jul 2017 21:23:47 +0000
End at: Thu, 13 Jul 2017 21:24:17 +0000
Local clock offset: 0.77 ms
Remote clock offset: -0.842 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:23 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 420.823 ms
Loss rate: 7.89%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 420.823 ms
Loss rate: 7.89%
```

Run 2: Report of TCP Cubic — Data Link

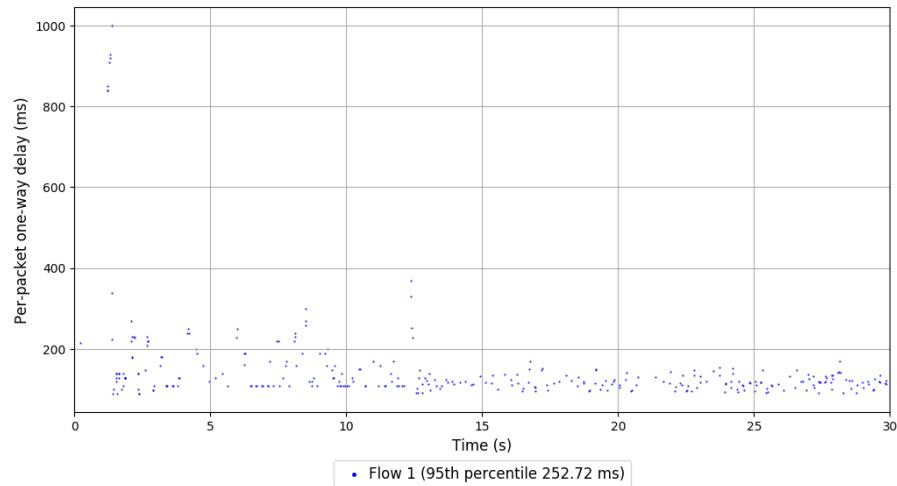
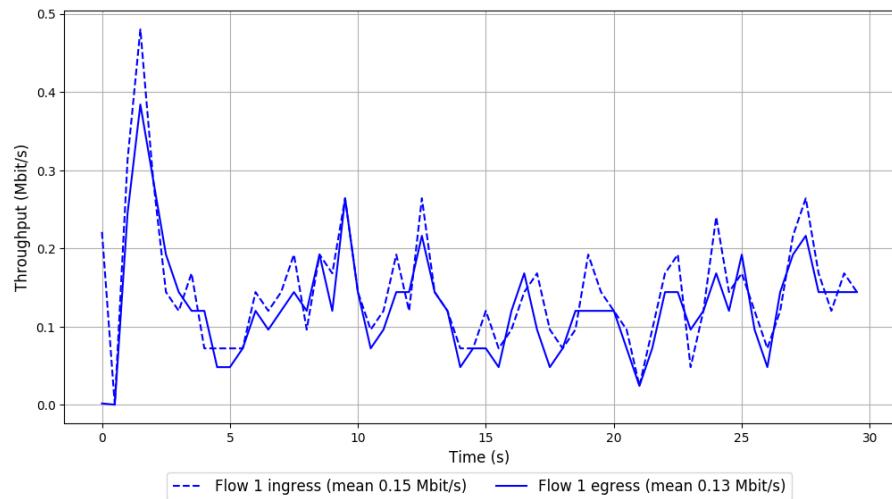


Run 3: Statistics of TCP Cubic

```
Start at: Thu, 13 Jul 2017 21:40:26 +0000
End at: Thu, 13 Jul 2017 21:40:56 +0000
Local clock offset: 0.698 ms
Remote clock offset: -0.222 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:23 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 252.721 ms
Loss rate: 12.97%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 252.721 ms
Loss rate: 12.97%
```

Run 3: Report of TCP Cubic — Data Link

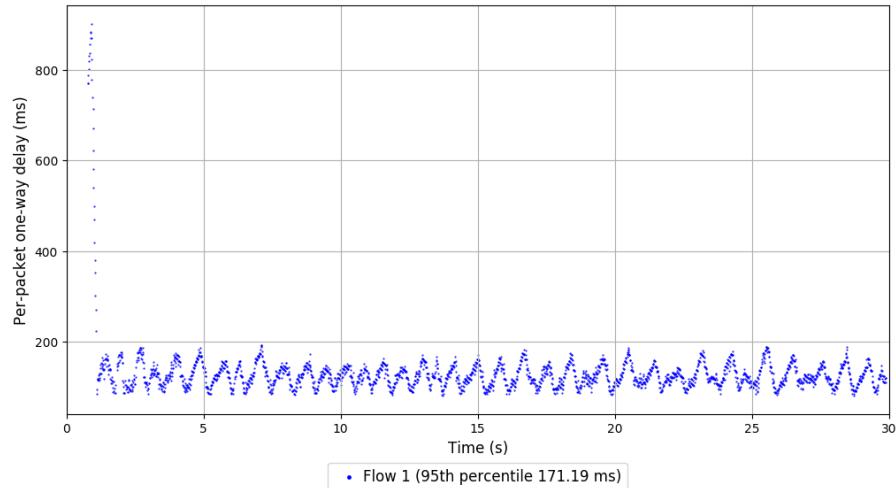
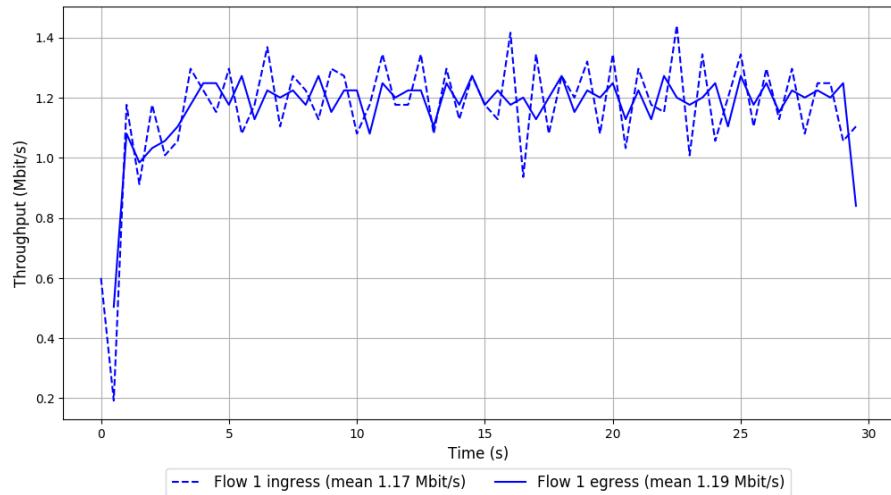


```
Run 1: Statistics of KohoCC
```

```
Start at: Thu, 13 Jul 2017 21:17:08 +0000
End at: Thu, 13 Jul 2017 21:17:38 +0000
Local clock offset: 0.93 ms
Remote clock offset: -1.77 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:25 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 171.192 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 171.192 ms
Loss rate: 1.20%
```

Run 1: Report of KohoCC — Data Link

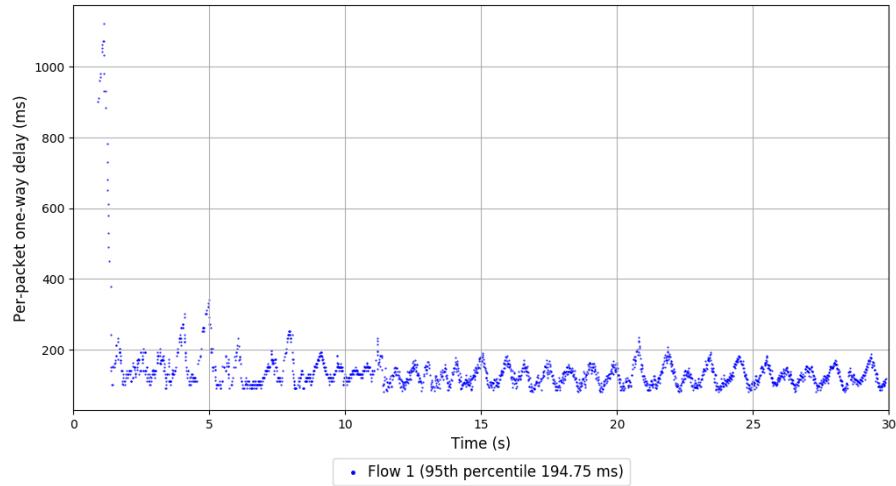
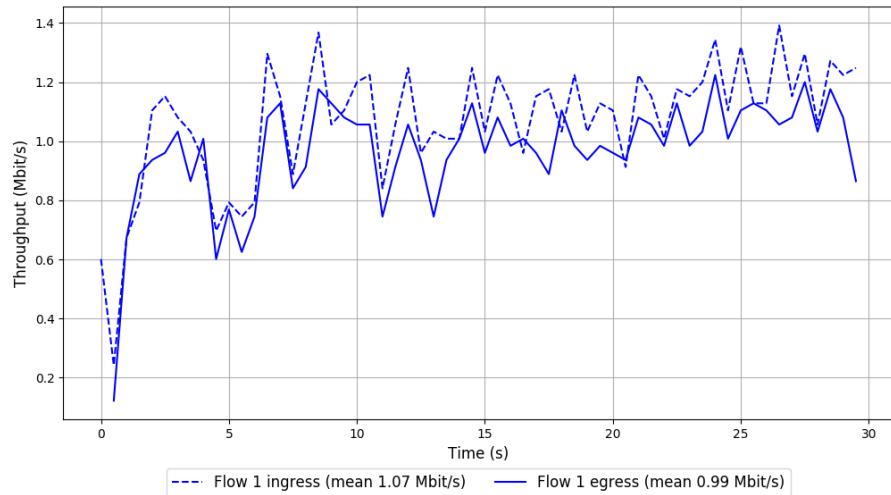


Run 2: Statistics of KohoCC

```
Start at: Thu, 13 Jul 2017 21:33:47 +0000
End at: Thu, 13 Jul 2017 21:34:17 +0000
Local clock offset: 0.815 ms
Remote clock offset: -0.599 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:25 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 194.754 ms
Loss rate: 10.74%
-- Flow 1:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 194.754 ms
Loss rate: 10.74%
```

Run 2: Report of KohoCC — Data Link

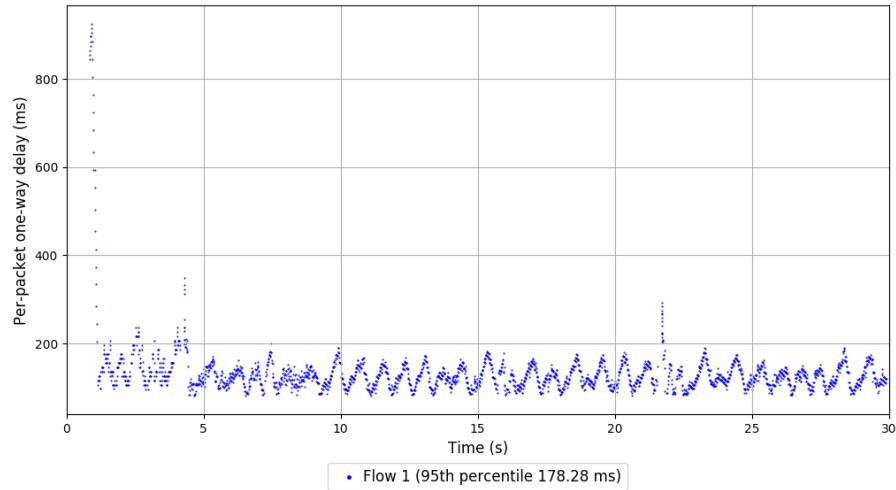
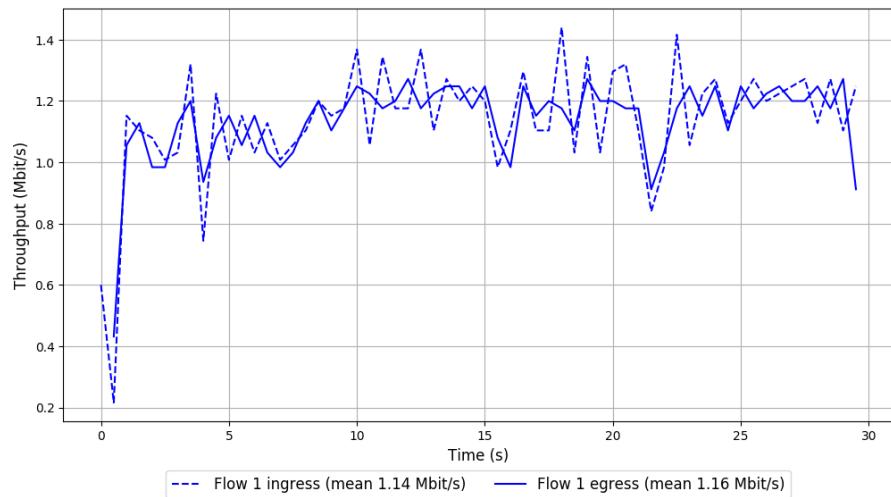


Run 3: Statistics of KohoCC

```
Start at: Thu, 13 Jul 2017 21:50:26 +0000
End at: Thu, 13 Jul 2017 21:50:56 +0000
Local clock offset: 0.686 ms
Remote clock offset: -0.001 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:26 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 178.285 ms
Loss rate: 1.65%
-- Flow 1:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 178.285 ms
Loss rate: 1.65%
```

Run 3: Report of KohoCC — Data Link

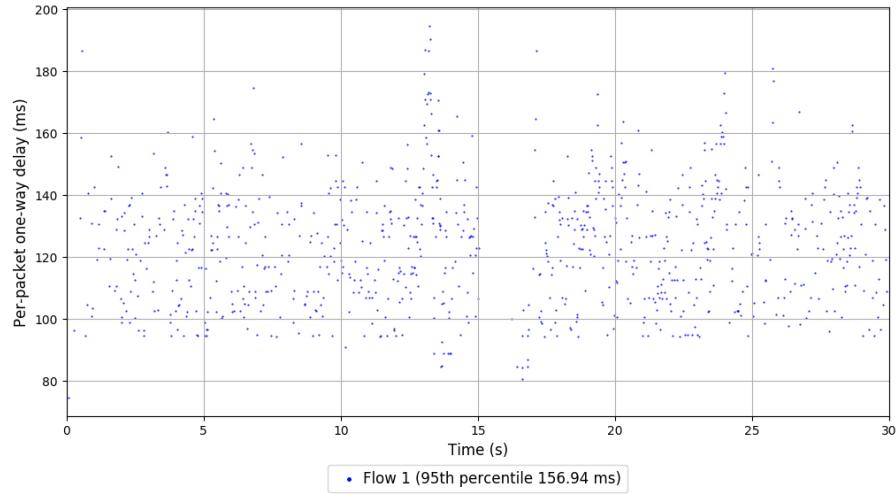
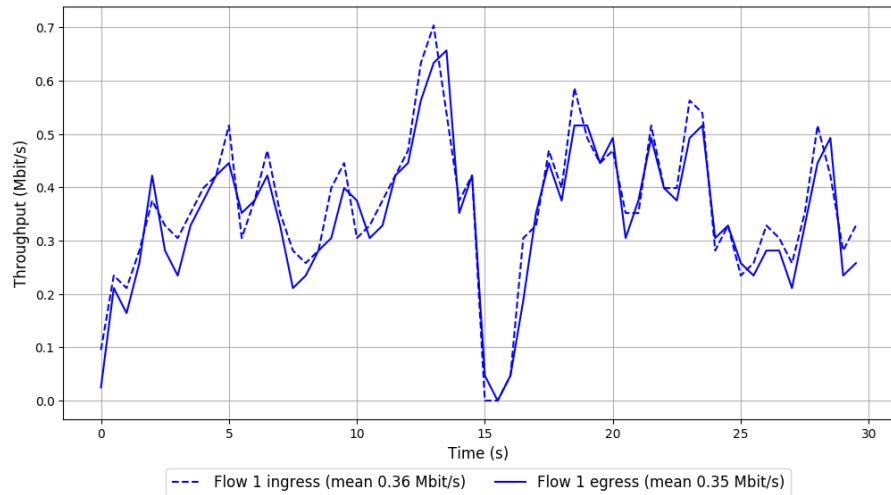


```
Run 1: Statistics of LEDBAT
```

```
Start at: Thu, 13 Jul 2017 21:01:36 +0000
End at: Thu, 13 Jul 2017 21:02:06 +0000
Local clock offset: 0.82 ms
Remote clock offset: -3.217 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:26 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 156.938 ms
Loss rate: 5.48%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 156.938 ms
Loss rate: 5.48%
```

Run 1: Report of LEDBAT — Data Link

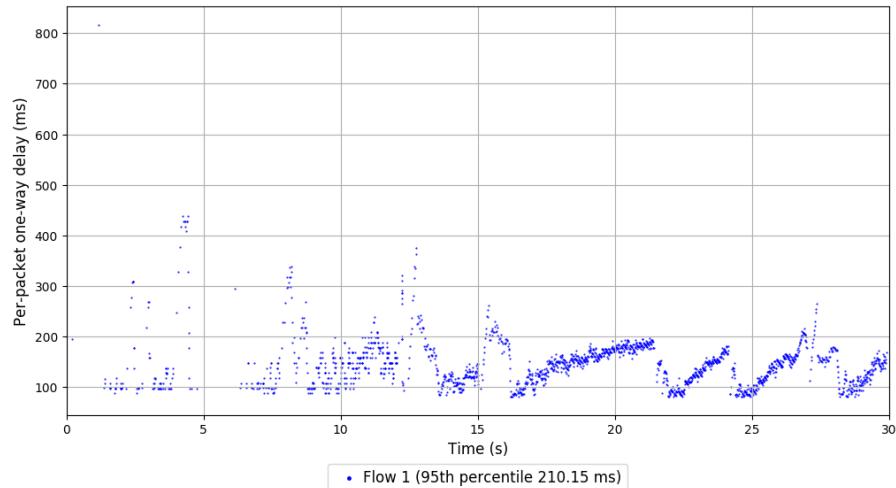
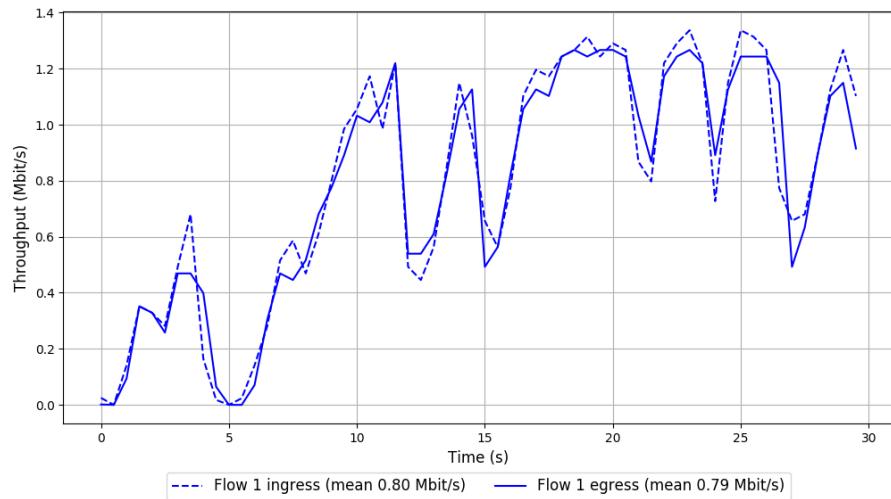


Run 2: Statistics of LEDBAT

```
Start at: Thu, 13 Jul 2017 21:18:14 +0000
End at: Thu, 13 Jul 2017 21:18:44 +0000
Local clock offset: 0.901 ms
Remote clock offset: -1.44 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:27 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 210.148 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 210.148 ms
Loss rate: 1.47%
```

Run 2: Report of LEDBAT — Data Link

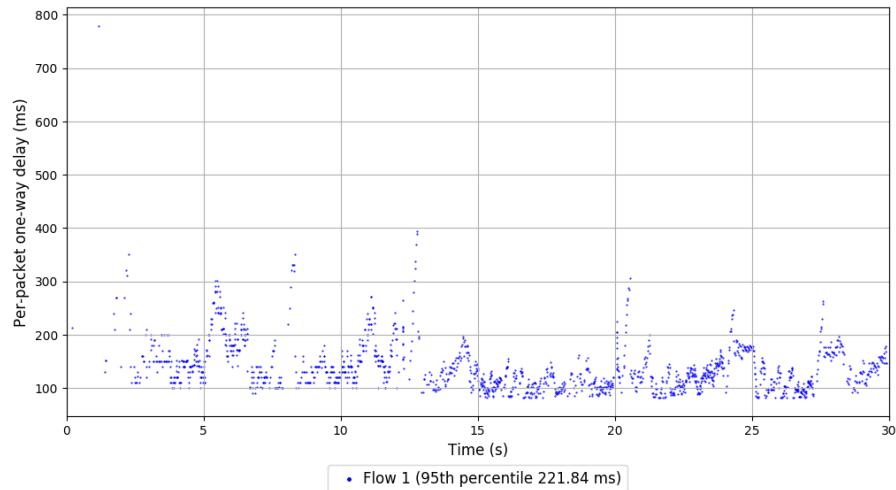
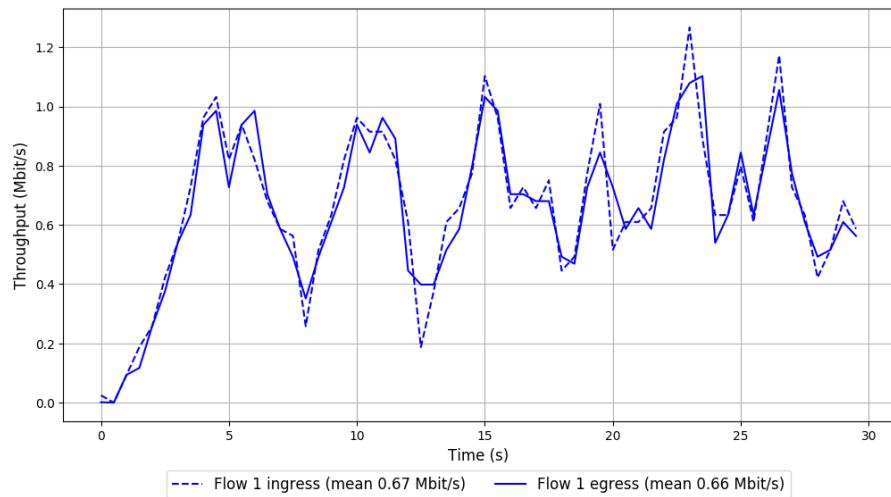


Run 3: Statistics of LEDBAT

```
Start at: Thu, 13 Jul 2017 21:34:53 +0000
End at: Thu, 13 Jul 2017 21:35:23 +0000
Local clock offset: 0.861 ms
Remote clock offset: -0.728 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:27 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 221.835 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 221.835 ms
Loss rate: 1.70%
```

Run 3: Report of LEDBAT — Data Link

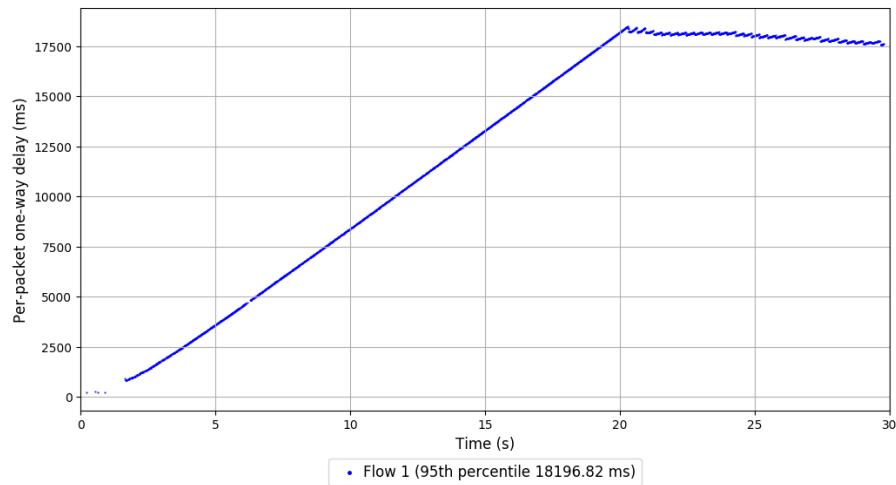
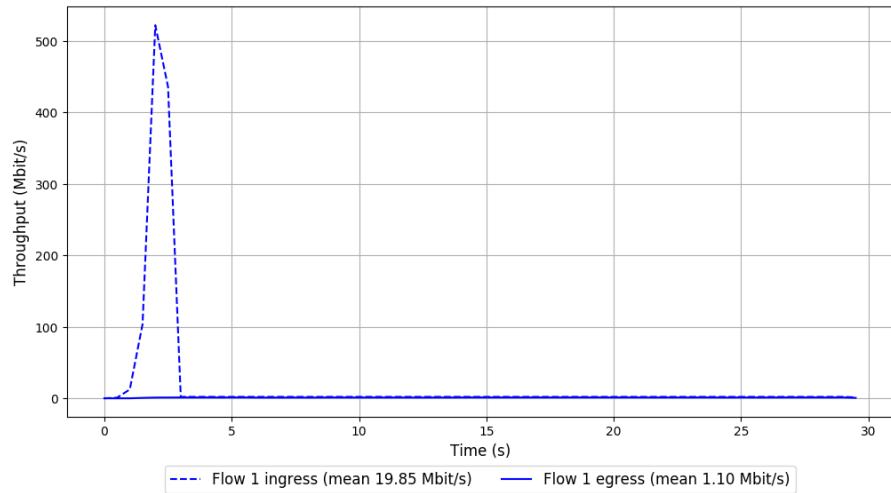


Run 1: Statistics of PCC

```
Start at: Thu, 13 Jul 2017 21:09:21 +0000
End at: Thu, 13 Jul 2017 21:09:51 +0000
Local clock offset: 0.866 ms
Remote clock offset: -1.822 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 18196.823 ms
Loss rate: 94.51%
-- Flow 1:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 18196.823 ms
Loss rate: 94.51%
```

Run 1: Report of PCC — Data Link

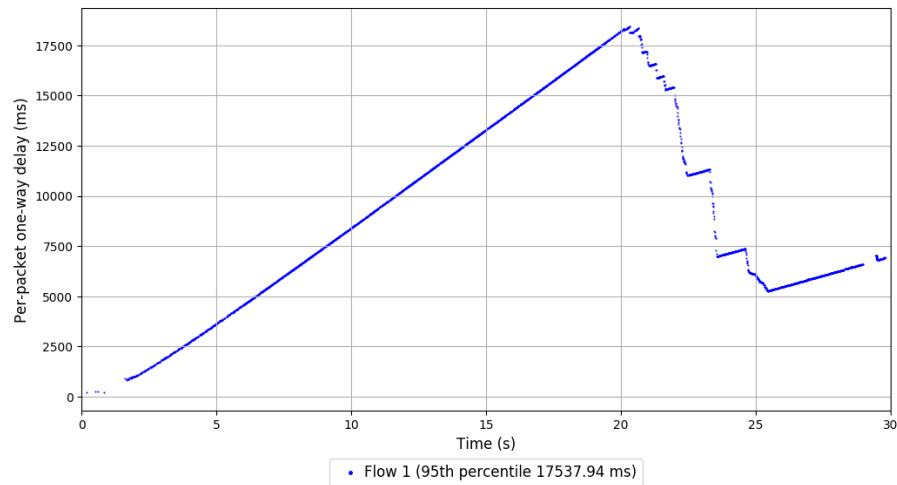
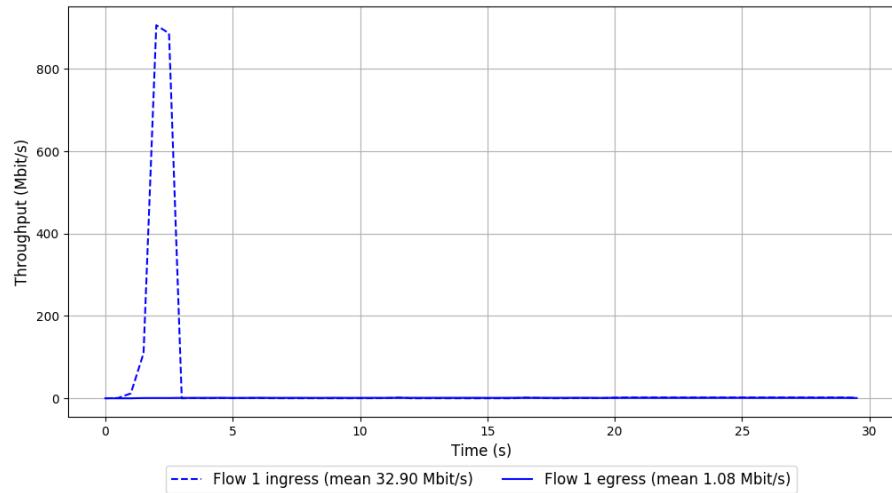


Run 2: Statistics of PCC

```
Start at: Thu, 13 Jul 2017 21:26:00 +0000
End at: Thu, 13 Jul 2017 21:26:30 +0000
Local clock offset: 0.838 ms
Remote clock offset: -0.982 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:29 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 17537.941 ms
Loss rate: 96.74%
-- Flow 1:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 17537.941 ms
Loss rate: 96.74%
```

Run 2: Report of PCC — Data Link

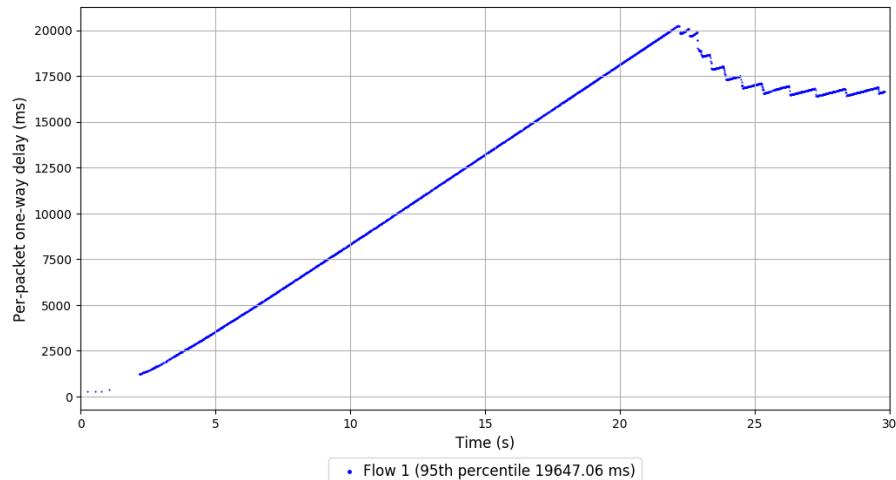
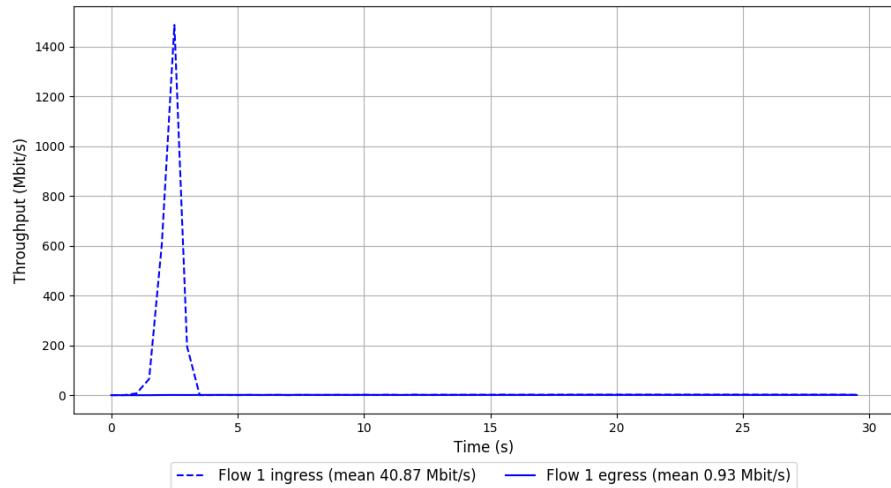


Run 3: Statistics of PCC

```
Start at: Thu, 13 Jul 2017 21:42:39 +0000
End at: Thu, 13 Jul 2017 21:43:09 +0000
Local clock offset: 0.702 ms
Remote clock offset: -0.286 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 19647.058 ms
Loss rate: 97.74%
-- Flow 1:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 19647.058 ms
Loss rate: 97.74%
```

Run 3: Report of PCC — Data Link

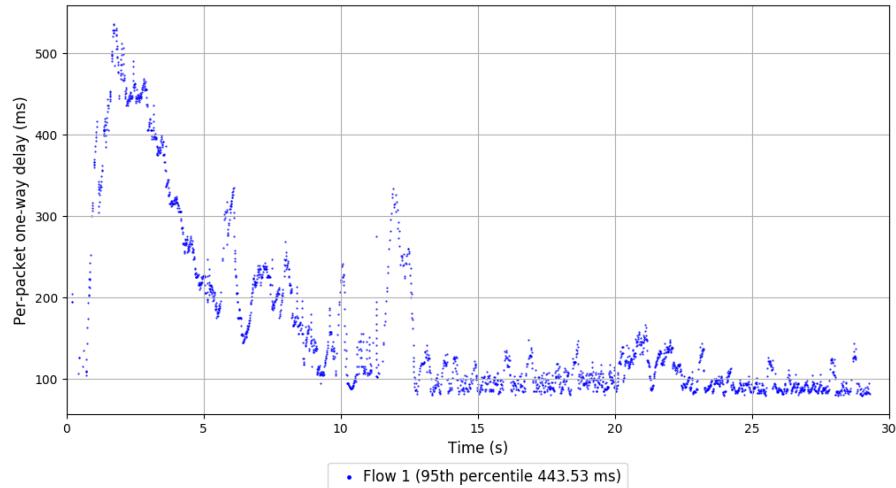
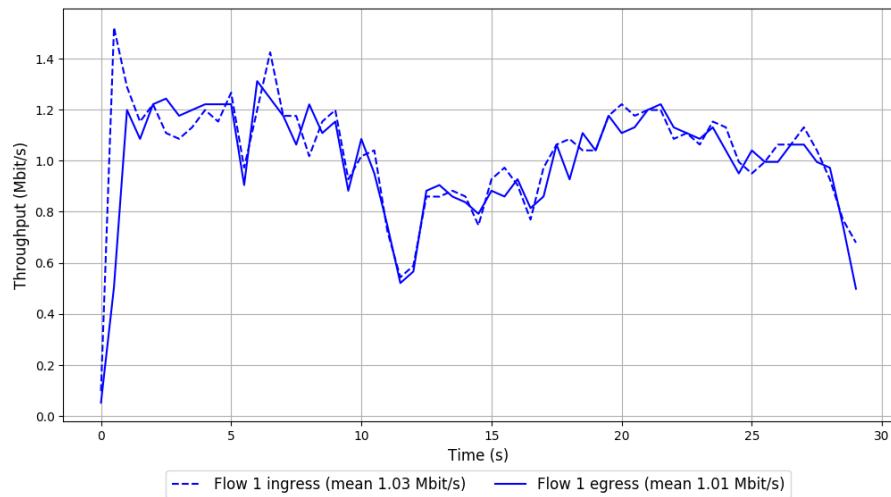


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: Thu, 13 Jul 2017 21:16:01 +0000
End at: Thu, 13 Jul 2017 21:16:31 +0000
Local clock offset: 0.91 ms
Remote clock offset: -1.516 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 443.532 ms
Loss rate: 2.99%
-- Flow 1:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 443.532 ms
Loss rate: 2.99%
```

Run 1: Report of QUIC Cubic — Data Link

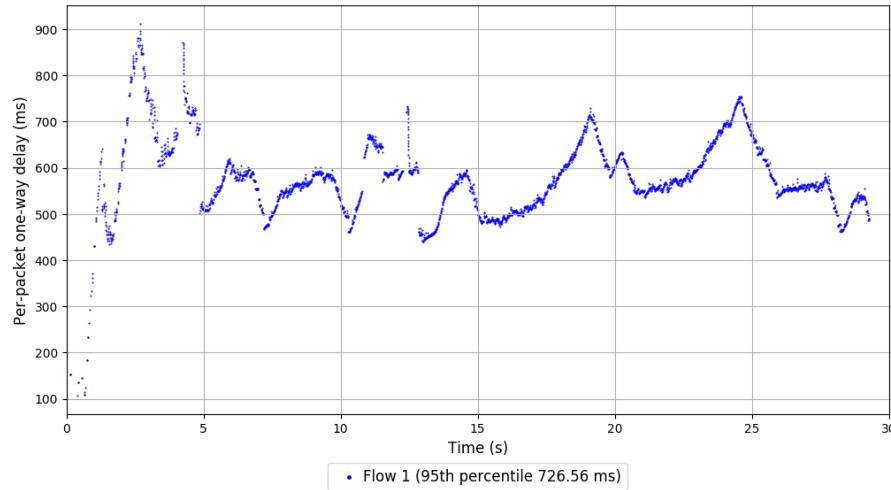
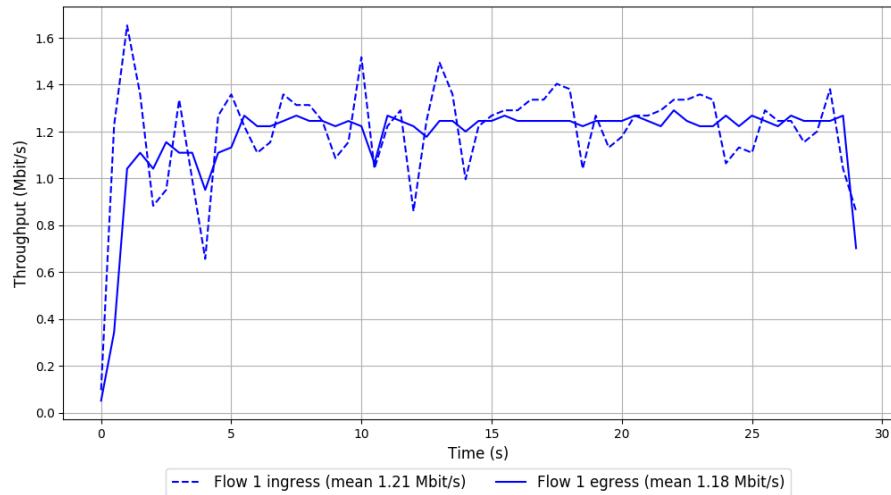


Run 2: Statistics of QUIC Cubic

```
Start at: Thu, 13 Jul 2017 21:32:40 +0000
End at: Thu, 13 Jul 2017 21:33:10 +0000
Local clock offset: 0.831 ms
Remote clock offset: -0.175 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 726.559 ms
Loss rate: 2.46%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 726.559 ms
Loss rate: 2.46%
```

Run 2: Report of QUIC Cubic — Data Link

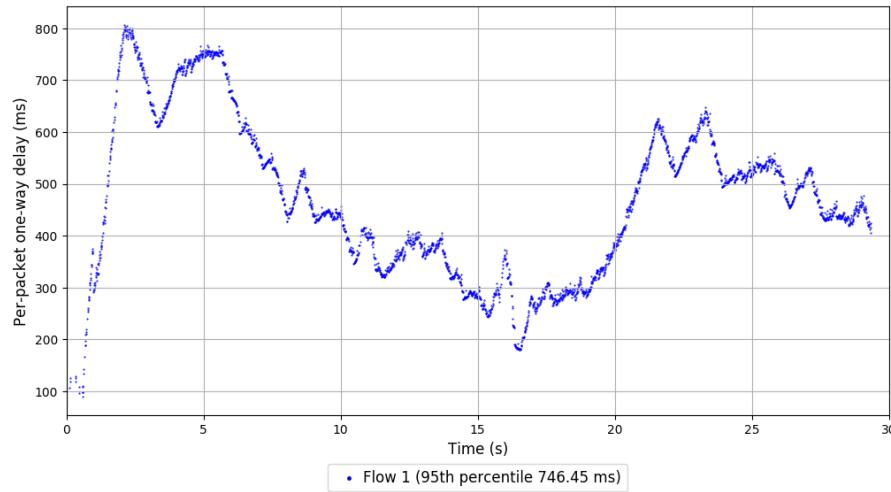
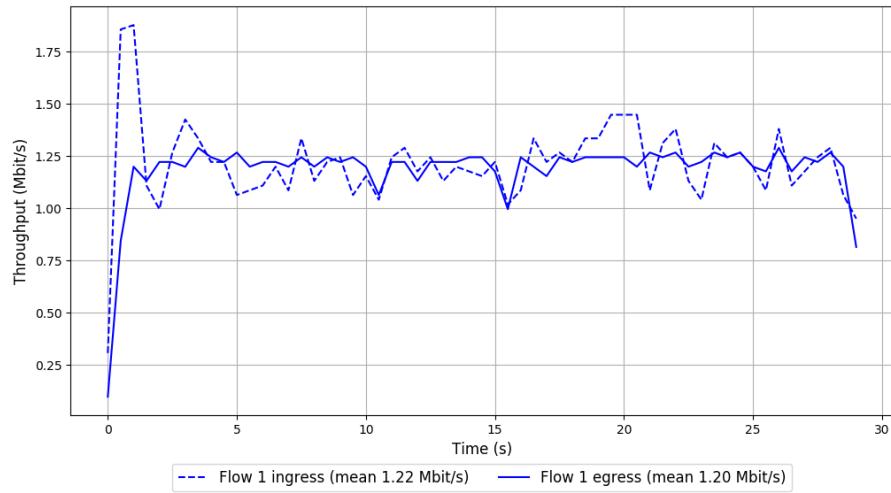


Run 3: Statistics of QUIC Cubic

```
Start at: Thu, 13 Jul 2017 21:49:19 +0000
End at: Thu, 13 Jul 2017 21:49:49 +0000
Local clock offset: 0.79 ms
Remote clock offset: 0.123 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 746.448 ms
Loss rate: 2.40%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 746.448 ms
Loss rate: 2.40%
```

Run 3: Report of QUIC Cubic — Data Link



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

```
Start at: Thu, 13 Jul 2017 21:03:49 +0000
```

```
End at: Thu, 13 Jul 2017 21:04:19 +0000
```

```
Local clock offset: 0.765 ms
```

```
Remote clock offset: -2.491 ms
```

```
# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:33 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 1.23 Mbit/s
```

```
95th percentile per-packet one-way delay: 1828.916 ms
```

```
Loss rate: 7.01%
```

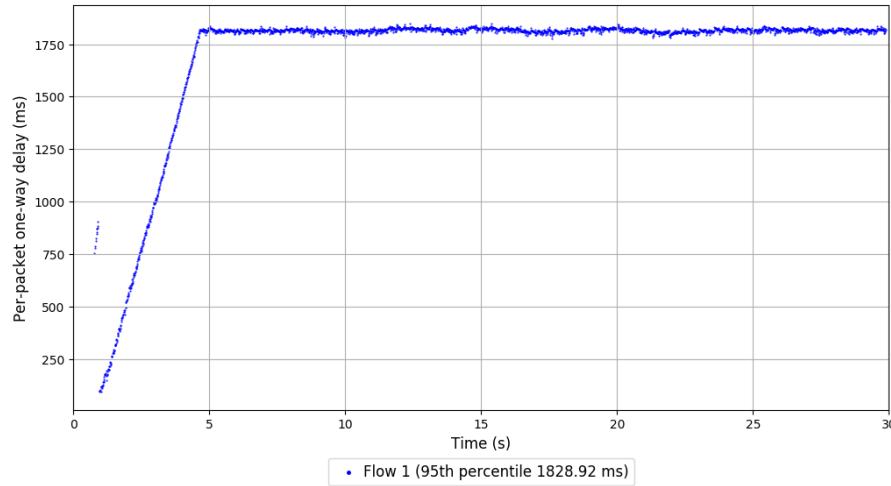
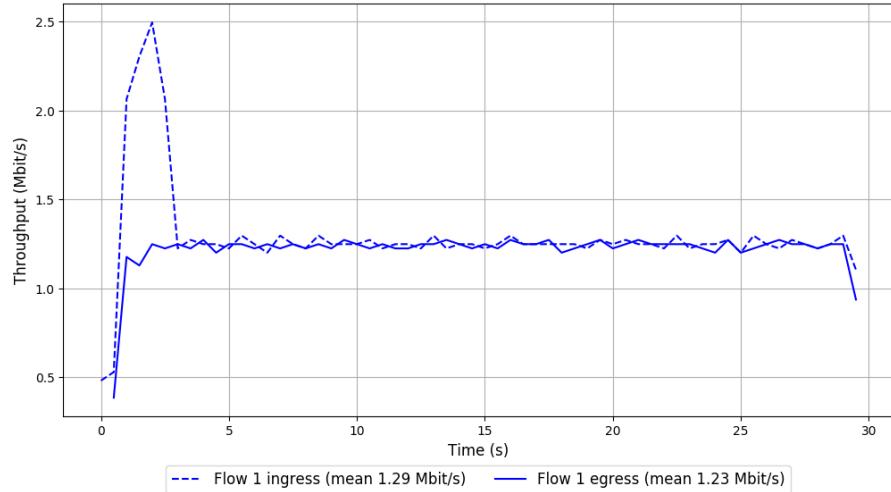
```
-- Flow 1:
```

```
Average throughput: 1.23 Mbit/s
```

```
95th percentile per-packet one-way delay: 1828.916 ms
```

```
Loss rate: 7.01%
```

Run 1: Report of Saturator — Data Link

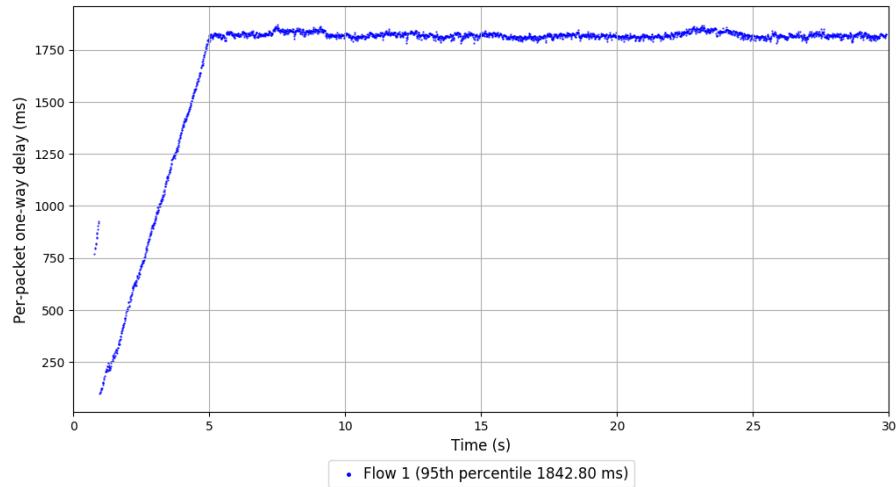
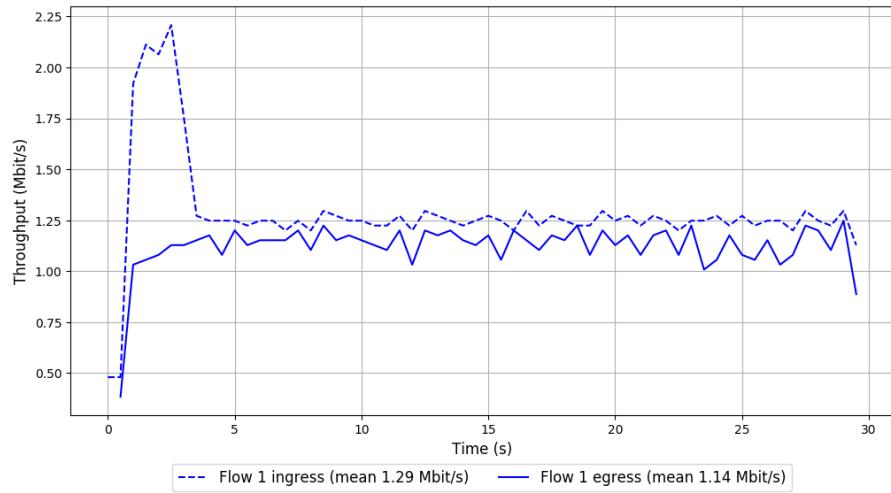


Run 2: Statistics of Saturator

```
Start at: Thu, 13 Jul 2017 21:20:27 +0000
End at: Thu, 13 Jul 2017 21:20:57 +0000
Local clock offset: 0.879 ms
Remote clock offset: -1.22 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 1842.801 ms
Loss rate: 14.02%
-- Flow 1:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 1842.801 ms
Loss rate: 14.02%
```

Run 2: Report of Saturator — Data Link

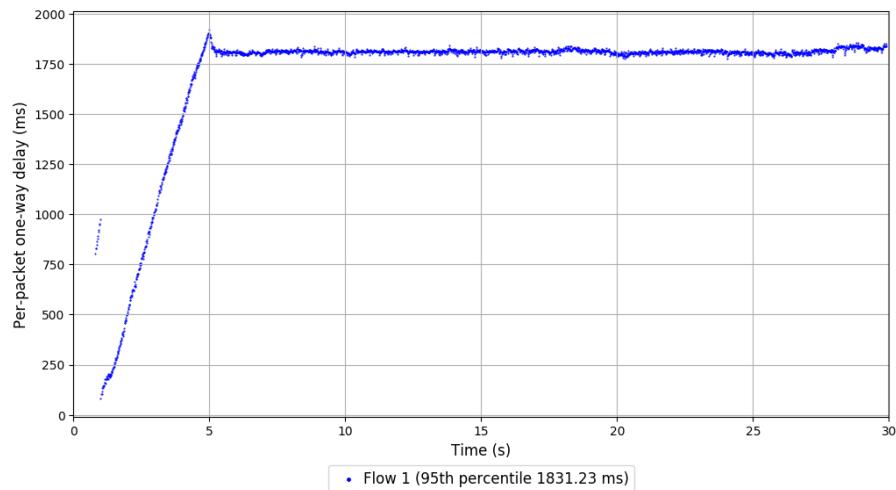
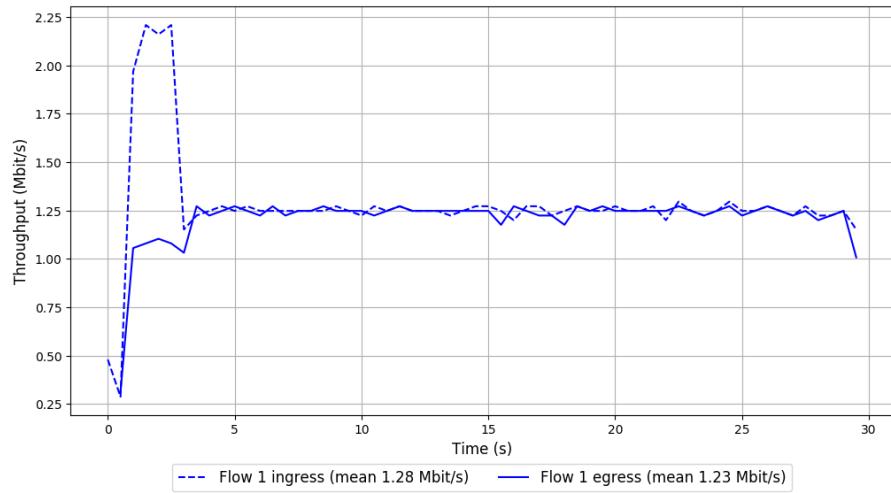


Run 3: Statistics of Saturator

```
Start at: Thu, 13 Jul 2017 21:37:06 +0000
End at: Thu, 13 Jul 2017 21:37:36 +0000
Local clock offset: 0.835 ms
Remote clock offset: -0.179 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 1831.229 ms
Loss rate: 6.86%
-- Flow 1:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 1831.229 ms
Loss rate: 6.86%
```

Run 3: Report of Saturator — Data Link



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

```
Start at: Thu, 13 Jul 2017 21:13:48 +0000
```

```
End at: Thu, 13 Jul 2017 21:14:18 +0000
```

```
Local clock offset: 0.892 ms
```

```
Remote clock offset: -1.545 ms
```

```
# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:34 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 0.08 Mbit/s
```

```
95th percentile per-packet one-way delay: 154.661 ms
```

```
Loss rate: 0.67%
```

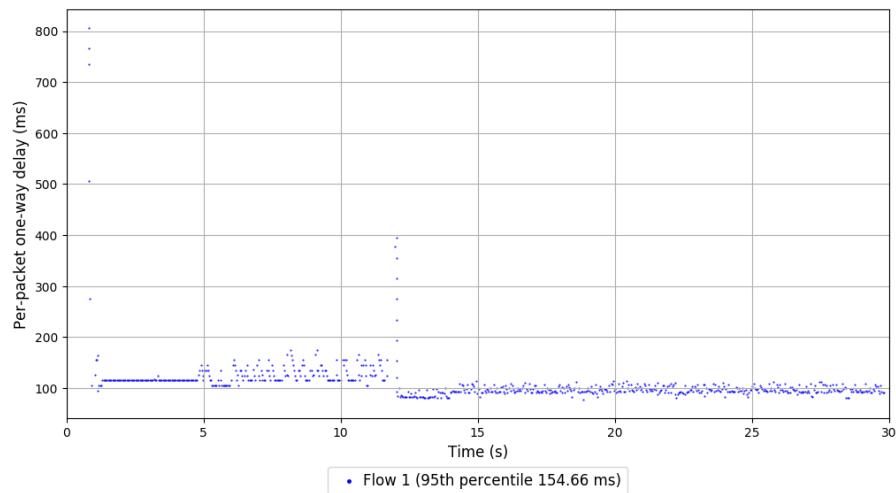
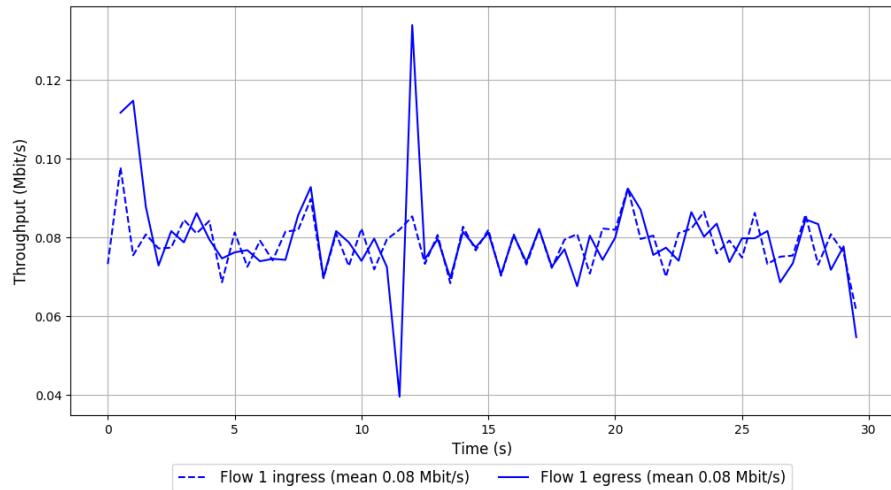
```
-- Flow 1:
```

```
Average throughput: 0.08 Mbit/s
```

```
95th percentile per-packet one-way delay: 154.661 ms
```

```
Loss rate: 0.67%
```

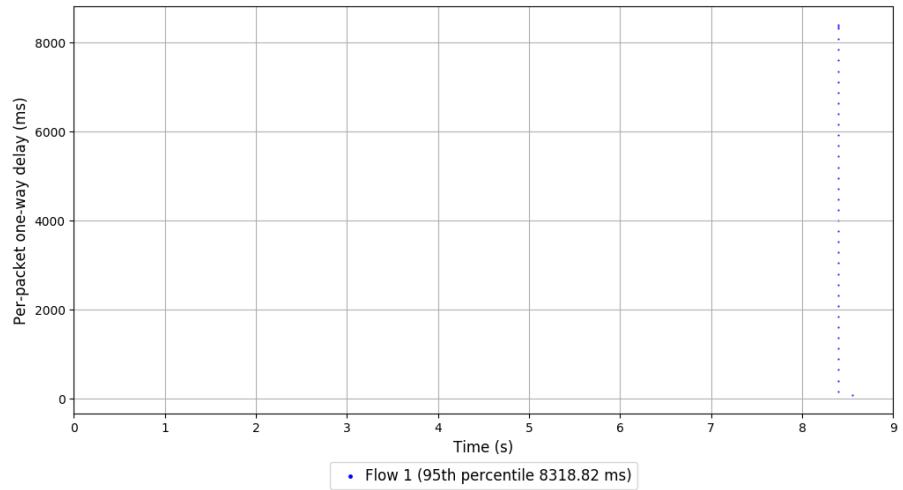
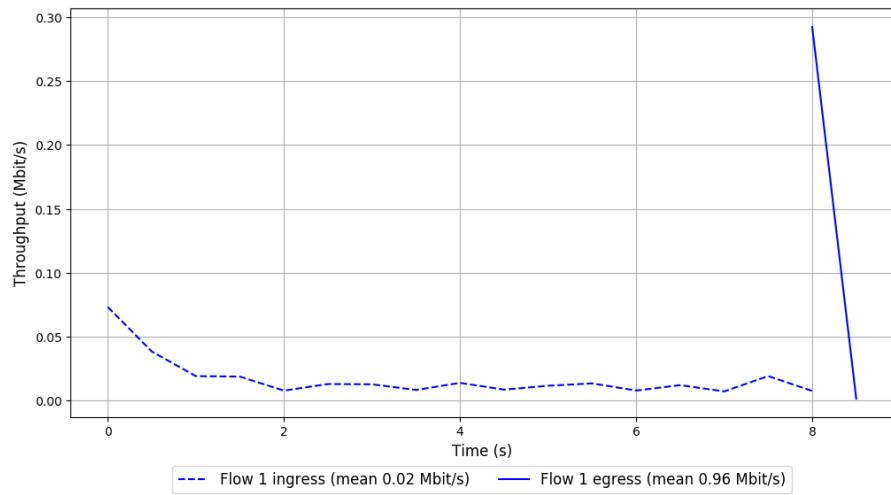
Run 1: Report of SCReAM — Data Link



Run 2: Statistics of SCReAM

Start at: Thu, 13 Jul 2017 21:30:27 +0000
End at: Thu, 13 Jul 2017 21:30:57 +0000
Local clock offset: 0.845 ms
Remote clock offset: -0.682 ms

Run 2: Report of SCReAM — Data Link

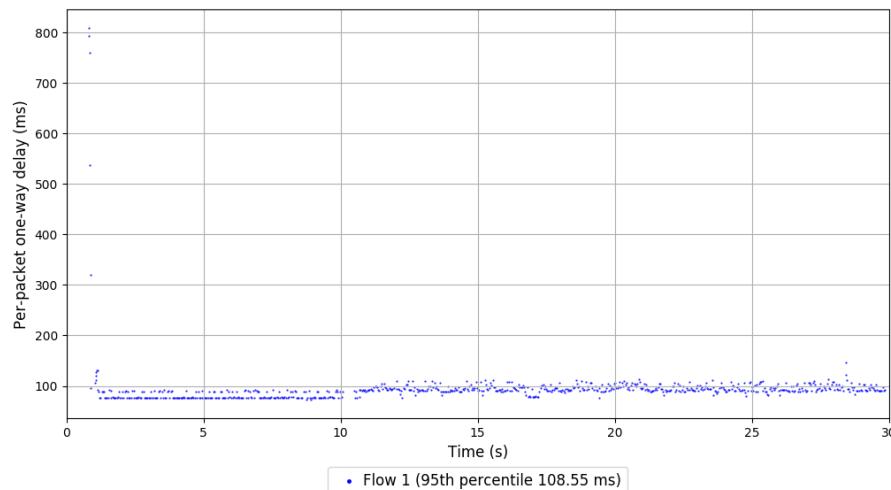
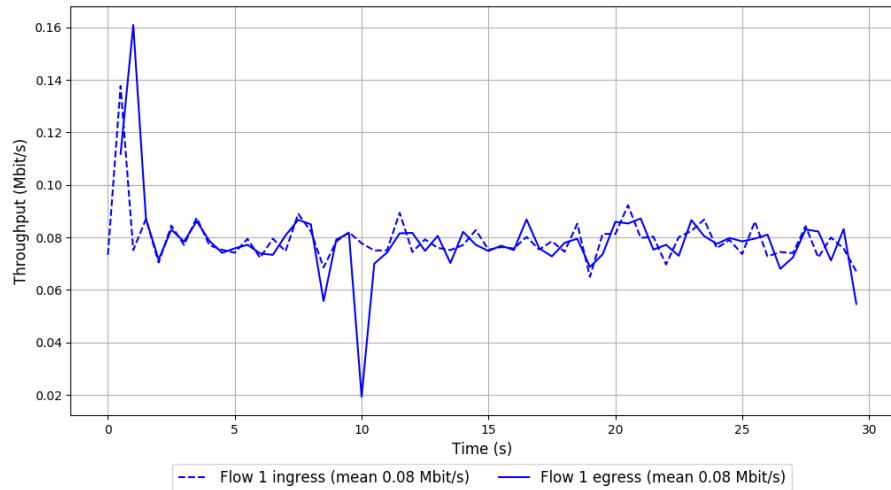


Run 3: Statistics of SCReAM

```
Start at: Thu, 13 Jul 2017 21:47:06 +0000
End at: Thu, 13 Jul 2017 21:47:36 +0000
Local clock offset: 0.78 ms
Remote clock offset: 0.285 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:36 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 108.551 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 108.551 ms
Loss rate: 2.23%
```

Run 3: Report of SCReAM — Data Link

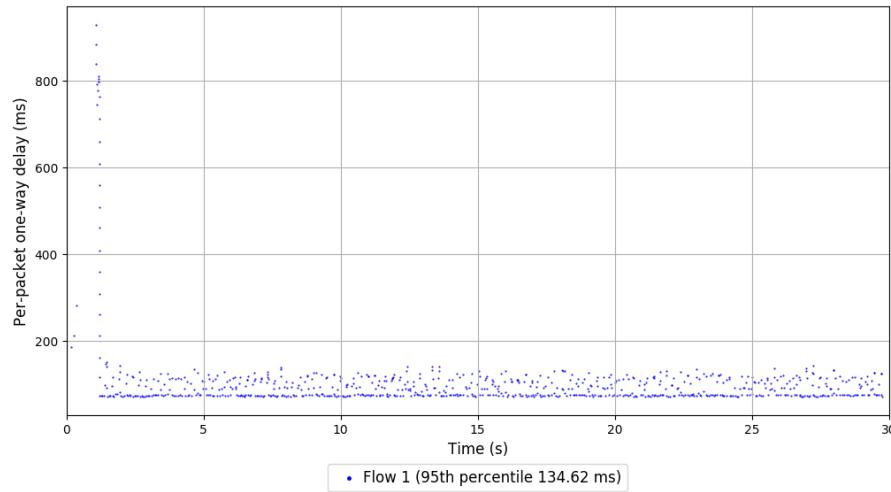
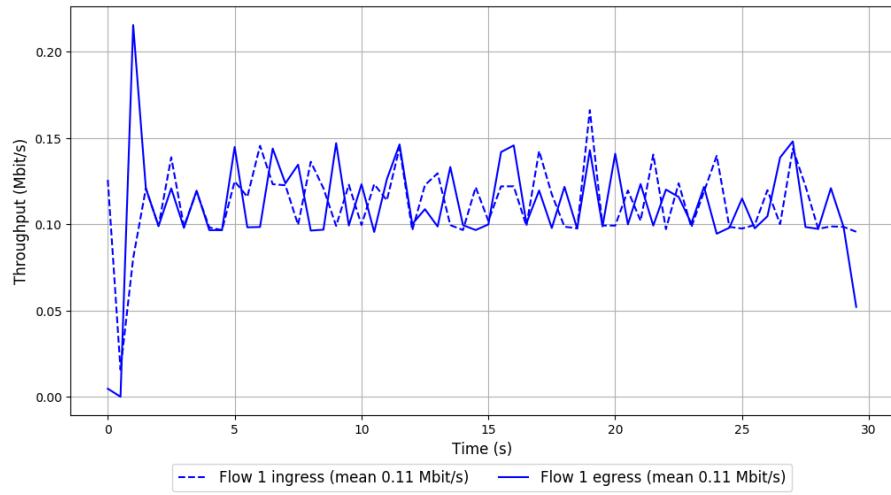


Run 1: Statistics of Sprout

```
Start at: Thu, 13 Jul 2017 21:02:42 +0000
End at: Thu, 13 Jul 2017 21:03:12 +0000
Local clock offset: 0.852 ms
Remote clock offset: -3.174 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:36 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 134.617 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 134.617 ms
Loss rate: 1.40%
```

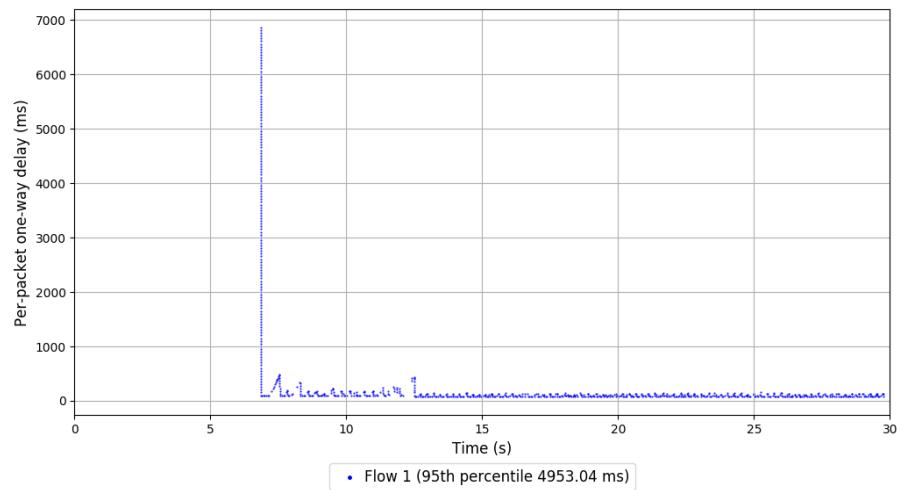
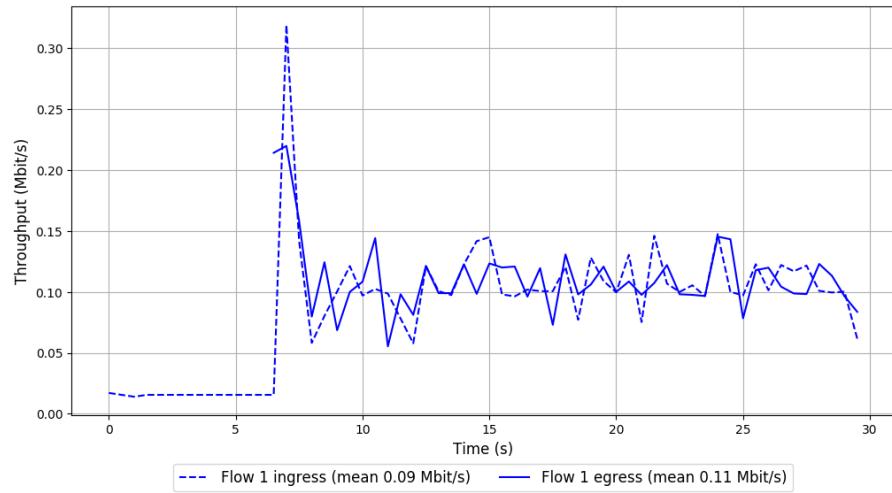
Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: Thu, 13 Jul 2017 21:19:21 +0000
End at: Thu, 13 Jul 2017 21:19:51 +0000
Local clock offset: 0.866 ms
Remote clock offset: -1.694 ms

Run 2: Report of Sprout — Data Link

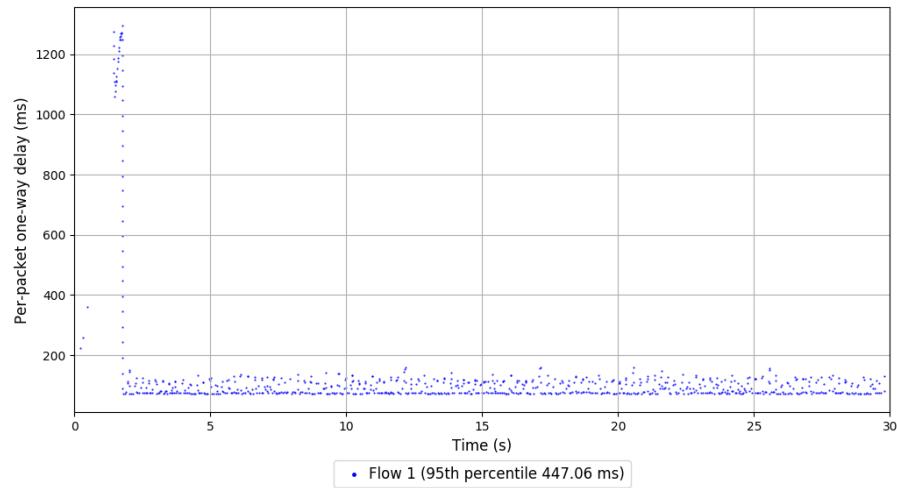
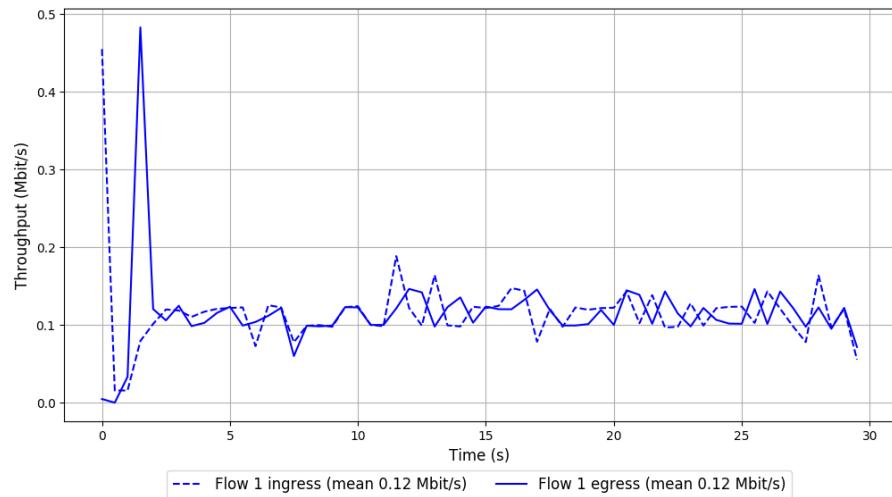


Run 3: Statistics of Sprout

```
Start at: Thu, 13 Jul 2017 21:36:00 +0000
End at: Thu, 13 Jul 2017 21:36:30 +0000
Local clock offset: 0.759 ms
Remote clock offset: -0.691 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:37 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 447.057 ms
Loss rate: 1.61%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 447.057 ms
Loss rate: 1.61%
```

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

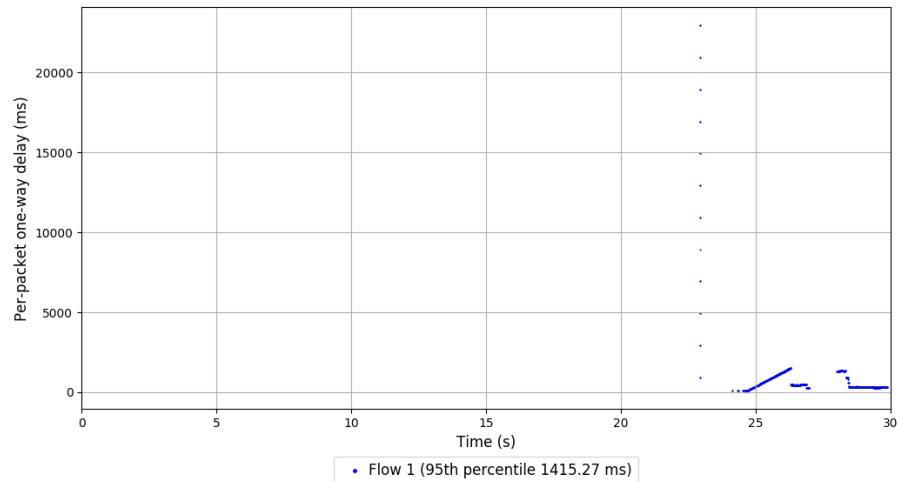
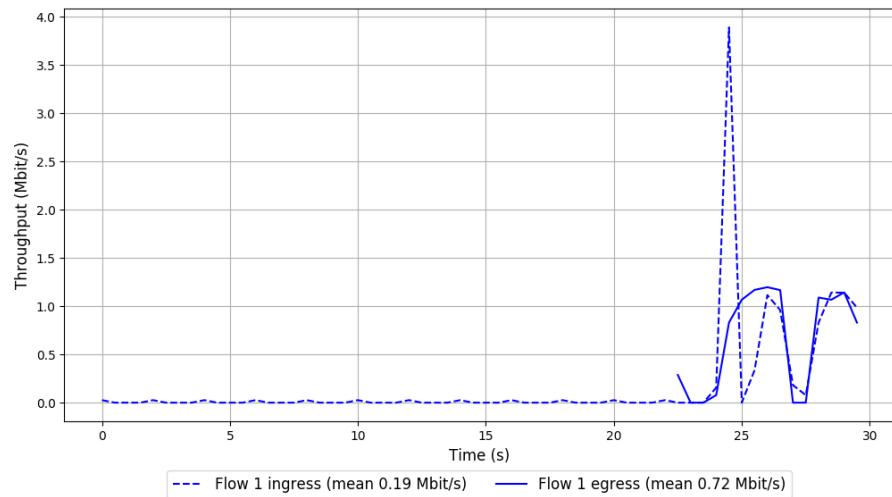
Start at: Thu, 13 Jul 2017 21:10:29 +0000

End at: Thu, 13 Jul 2017 21:10:59 +0000

Local clock offset: 0.89 ms

Remote clock offset: -1.968 ms

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

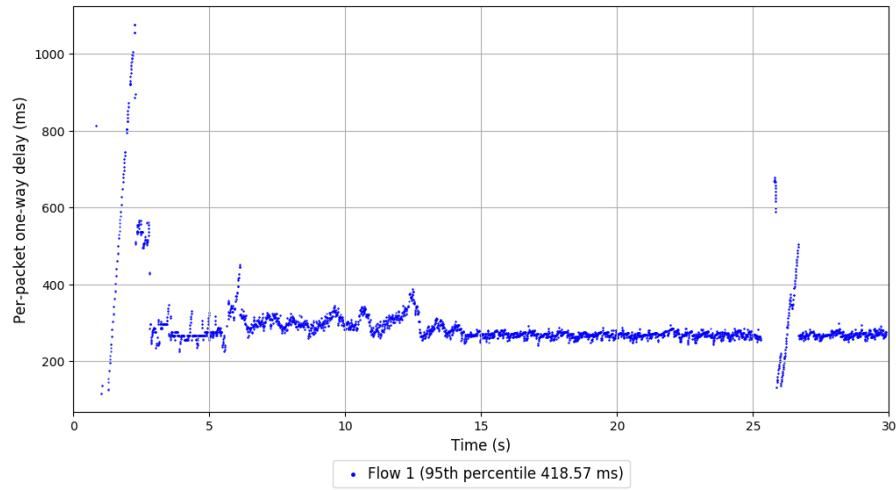
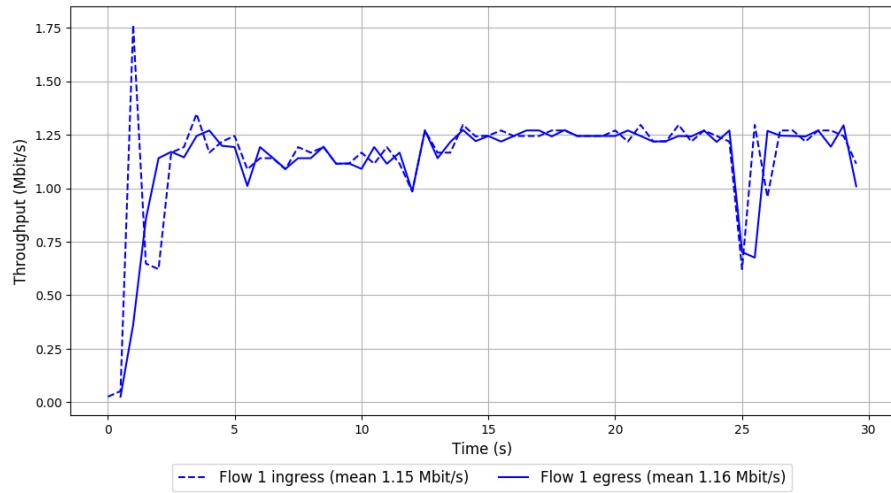


Run 2: Statistics of TaoVA-100x

```
Start at: Thu, 13 Jul 2017 21:27:08 +0000
End at: Thu, 13 Jul 2017 21:27:38 +0000
Local clock offset: 0.809 ms
Remote clock offset: -0.907 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:39 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 418.573 ms
Loss rate: 2.07%
-- Flow 1:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 418.573 ms
Loss rate: 2.07%
```

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

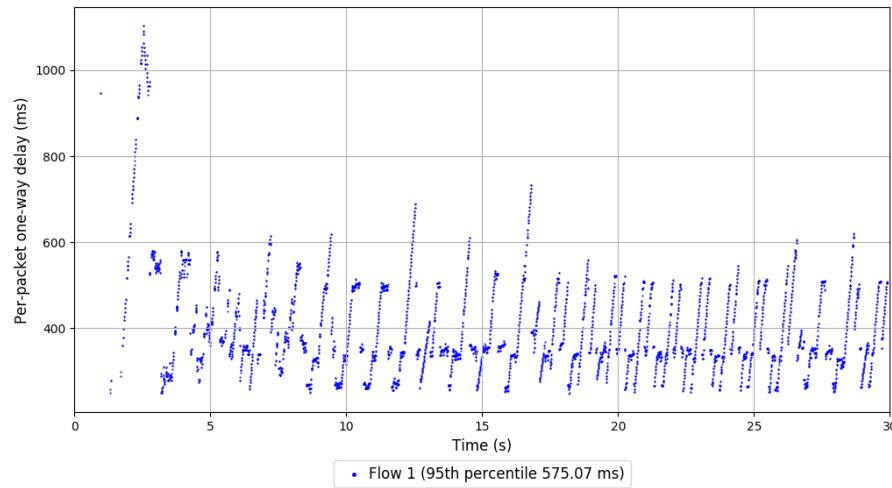
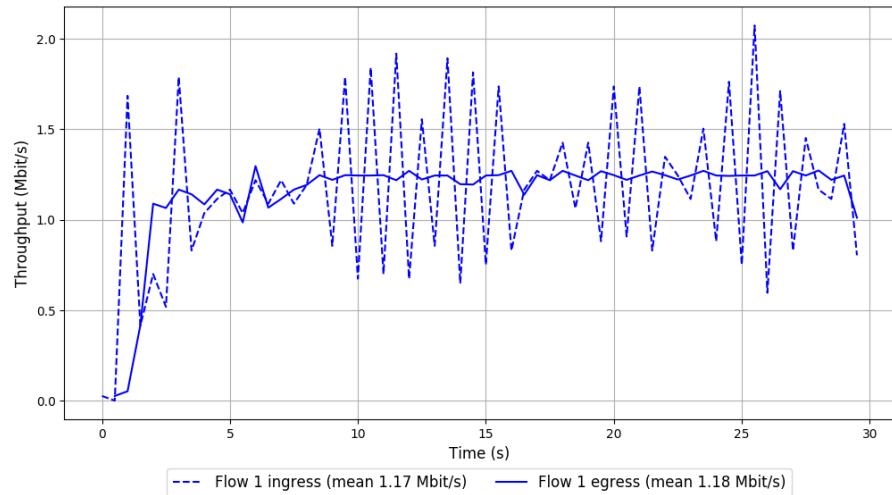


Run 3: Statistics of TaoVA-100x

```
Start at: Thu, 13 Jul 2017 21:43:47 +0000
End at: Thu, 13 Jul 2017 21:44:17 +0000
Local clock offset: 0.769 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:39 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 575.067 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 575.067 ms
Loss rate: 2.15%
```

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

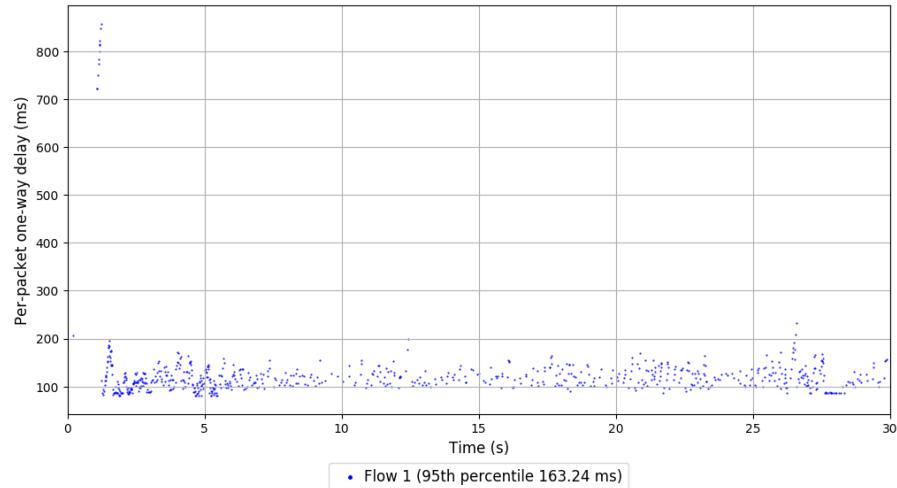
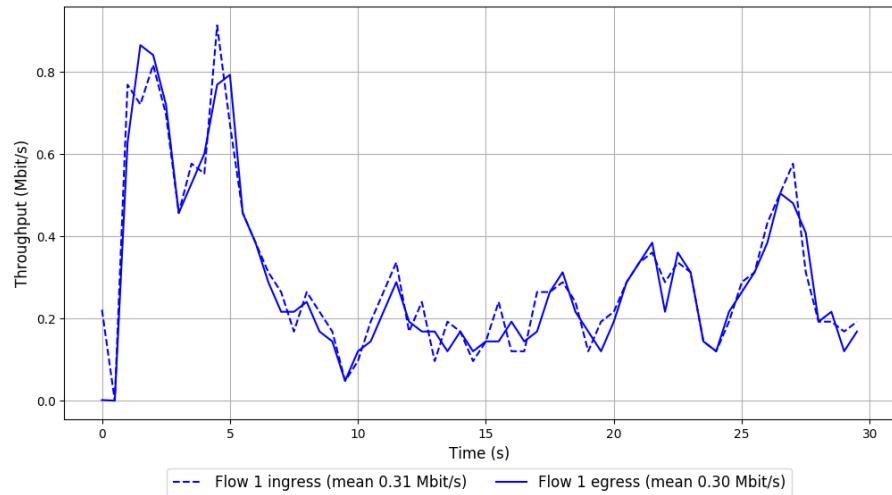


Run 1: Statistics of TCP Vegas

```
Start at: Thu, 13 Jul 2017 21:08:15 +0000
End at: Thu, 13 Jul 2017 21:08:45 +0000
Local clock offset: 0.87 ms
Remote clock offset: -2.16 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:40 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 163.237 ms
Loss rate: 3.94%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 163.237 ms
Loss rate: 3.94%
```

Run 1: Report of TCP Vegas — Data Link

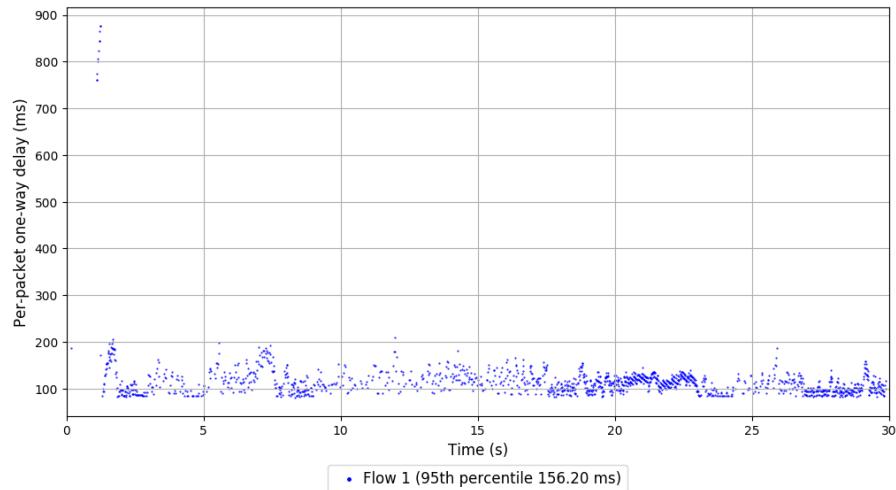
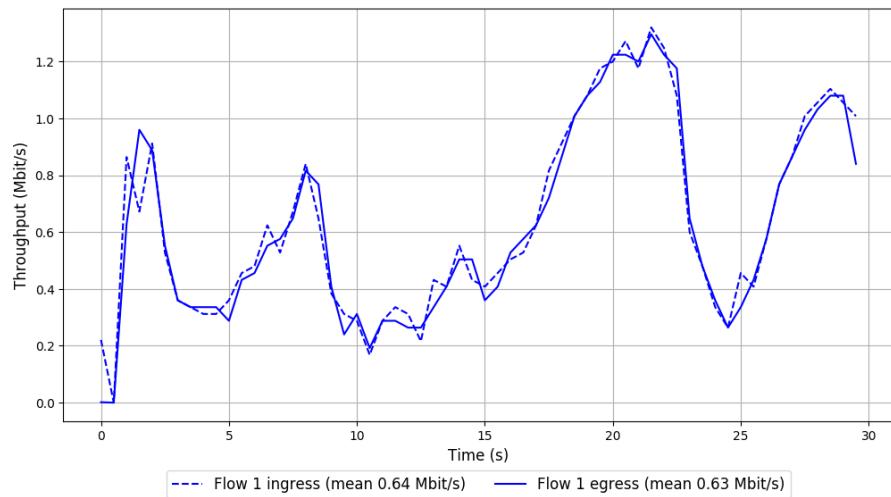


Run 2: Statistics of TCP Vegas

```
Start at: Thu, 13 Jul 2017 21:24:53 +0000
End at: Thu, 13 Jul 2017 21:25:23 +0000
Local clock offset: 0.877 ms
Remote clock offset: -1.069 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:40 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 156.202 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 156.202 ms
Loss rate: 1.96%
```

Run 2: Report of TCP Vegas — Data Link

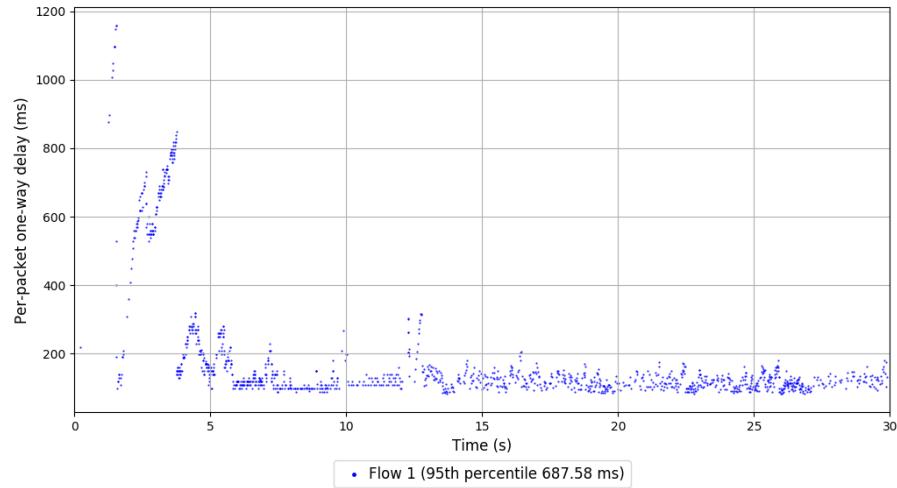
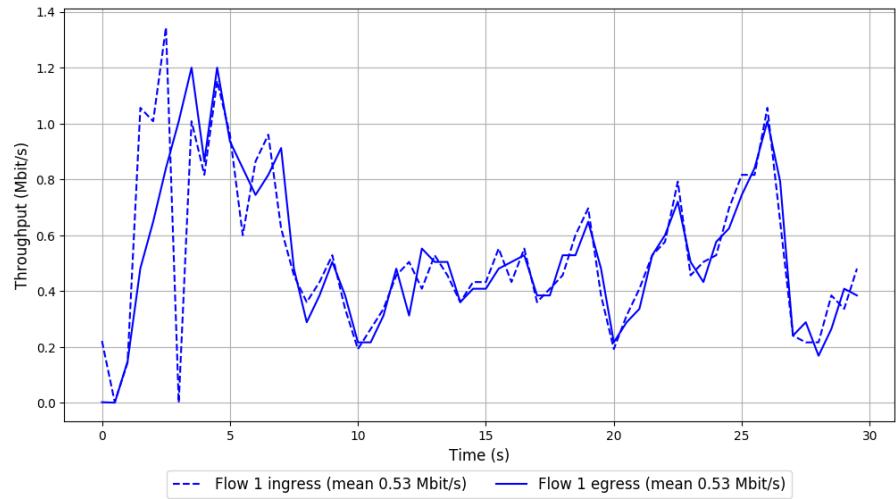


Run 3: Statistics of TCP Vegas

```
Start at: Thu, 13 Jul 2017 21:41:32 +0000
End at: Thu, 13 Jul 2017 21:42:02 +0000
Local clock offset: 0.789 ms
Remote clock offset: -0.271 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 687.580 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 687.580 ms
Loss rate: 1.58%
```

Run 3: Report of TCP Vegas — Data Link

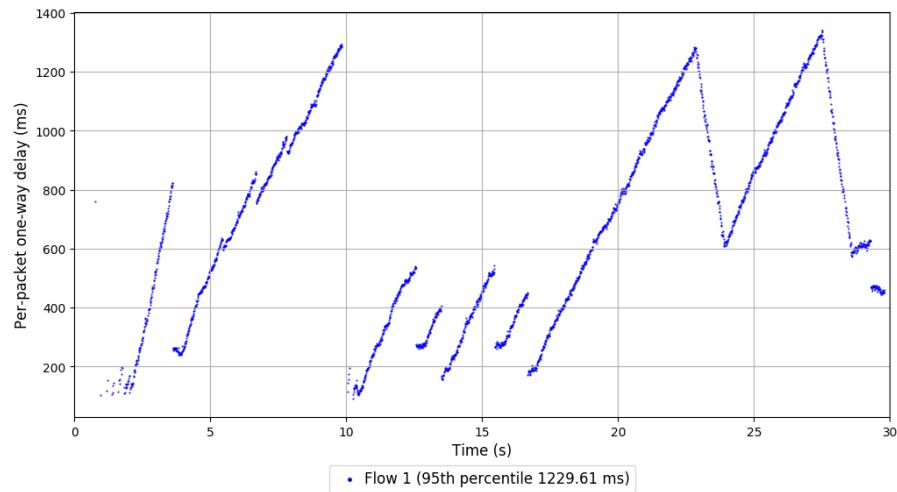
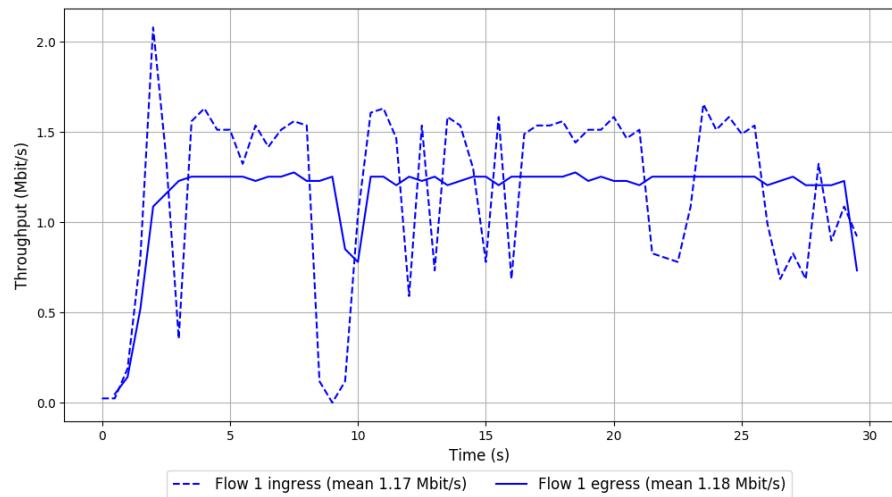


Run 1: Statistics of Verus

```
Start at: Thu, 13 Jul 2017 21:14:55 +0000
End at: Thu, 13 Jul 2017 21:15:25 +0000
Local clock offset: 0.889 ms
Remote clock offset: -1.929 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 1229.613 ms
Loss rate: 2.12%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 1229.613 ms
Loss rate: 2.12%
```

Run 1: Report of Verus — Data Link

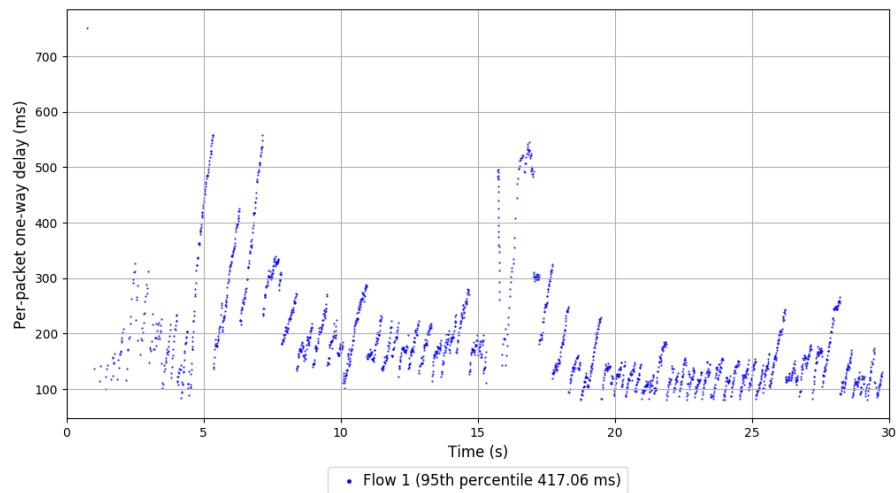
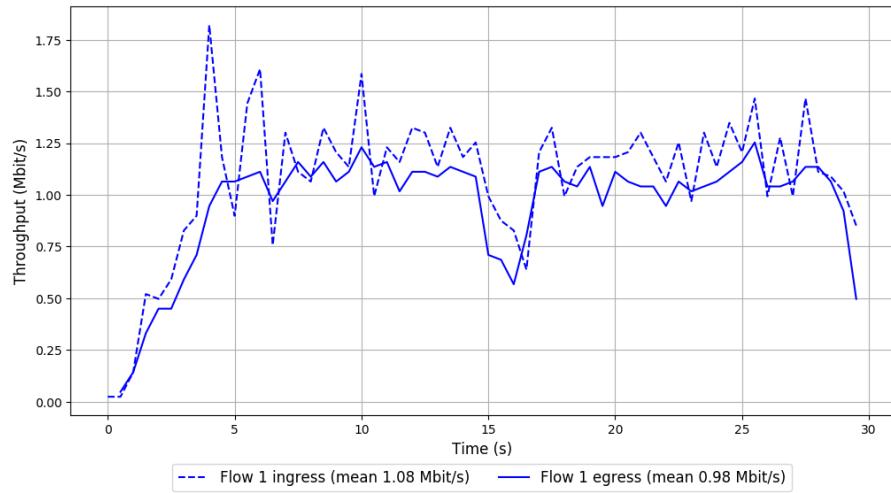


Run 2: Statistics of Verus

```
Start at: Thu, 13 Jul 2017 21:31:33 +0000
End at: Thu, 13 Jul 2017 21:32:03 +0000
Local clock offset: 0.857 ms
Remote clock offset: -1.01 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:42 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 417.064 ms
Loss rate: 12.11%
-- Flow 1:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 417.064 ms
Loss rate: 12.11%
```

Run 2: Report of Verus — Data Link

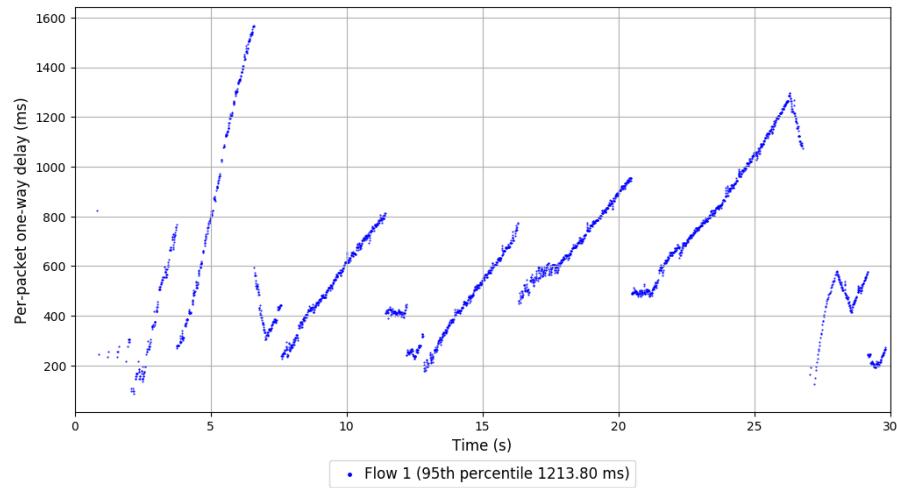
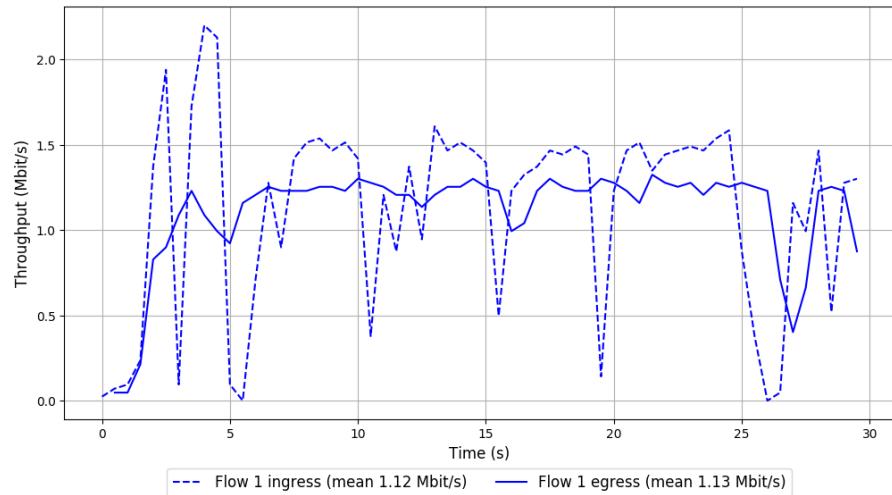


Run 3: Statistics of Verus

```
Start at: Thu, 13 Jul 2017 21:48:13 +0000
End at: Thu, 13 Jul 2017 21:48:43 +0000
Local clock offset: 0.722 ms
Remote clock offset: 0.412 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:42 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 1213.804 ms
Loss rate: 2.12%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 1213.804 ms
Loss rate: 2.12%
```

Run 3: Report of Verus — Data Link

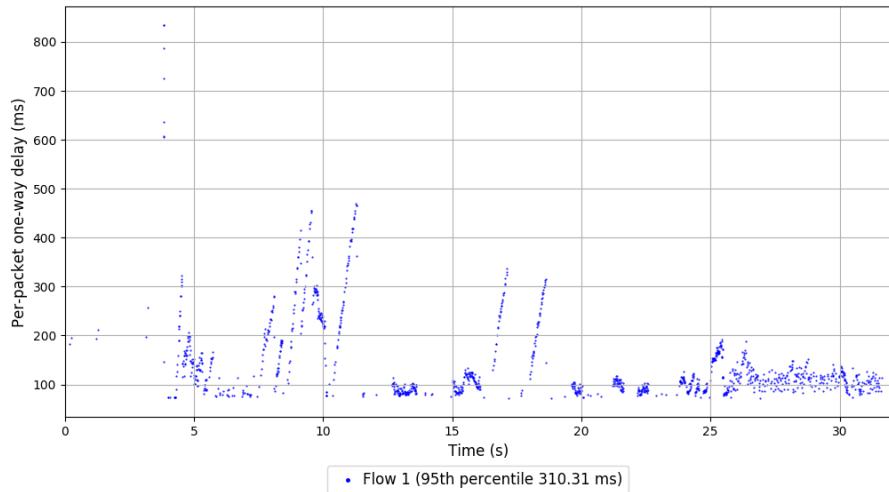
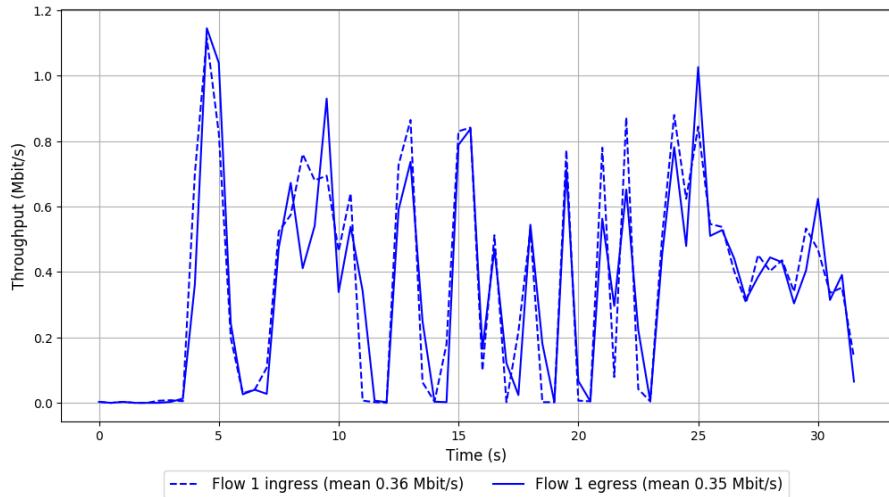


```
Run 1: Statistics of WebRTC media

Start at: Thu, 13 Jul 2017 21:12:42 +0000
End at: Thu, 13 Jul 2017 21:13:12 +0000
Local clock offset: 0.889 ms
Remote clock offset: -1.888 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:43 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 310.315 ms
Loss rate: 2.76%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 310.315 ms
Loss rate: 2.76%
```

Run 1: Report of WebRTC media — Data Link

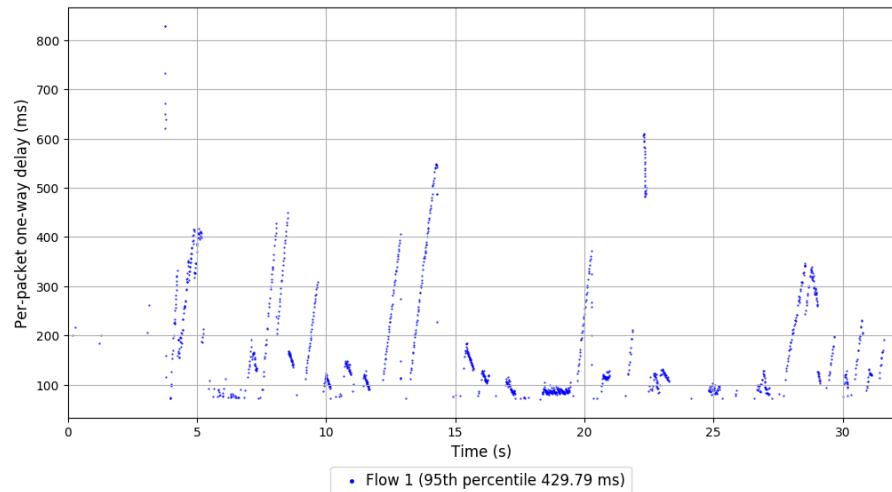
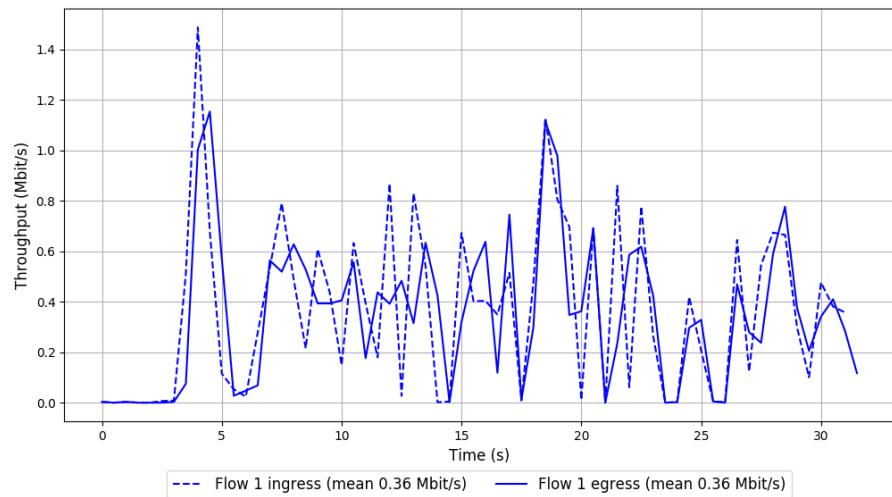


Run 2: Statistics of WebRTC media

```
Start at: Thu, 13 Jul 2017 21:29:21 +0000
End at: Thu, 13 Jul 2017 21:29:51 +0000
Local clock offset: 0.798 ms
Remote clock offset: -0.8 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:44 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 429.788 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 429.788 ms
Loss rate: 1.57%
```

Run 2: Report of WebRTC media — Data Link



```
Run 3: Statistics of WebRTC media

Start at: Thu, 13 Jul 2017 21:46:00 +0000
End at: Thu, 13 Jul 2017 21:46:30 +0000
Local clock offset: 0.782 ms
Remote clock offset: -0.55 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:44 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 436.706 ms
Loss rate: 5.49%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 436.706 ms
Loss rate: 5.49%
```

Run 3: Report of WebRTC media — Data Link

