

Pantheon Summary (Generated at Thu, 13 Jul 2017 21:52:06 +0000 with
pantheon version d7b3554d9e52d3442ab19bc1e1c71f4629d4a0ac)

Repeated the test of 15 congestion control schemes 3 times.

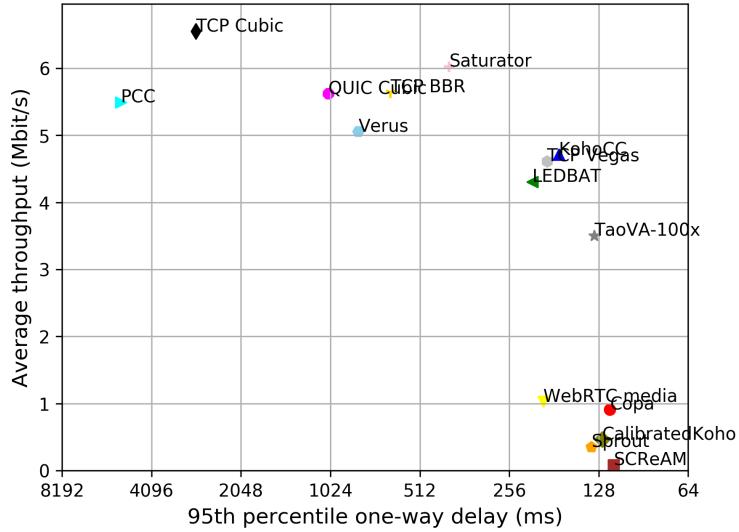
Each test lasted for 30 seconds running 1 flow.

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

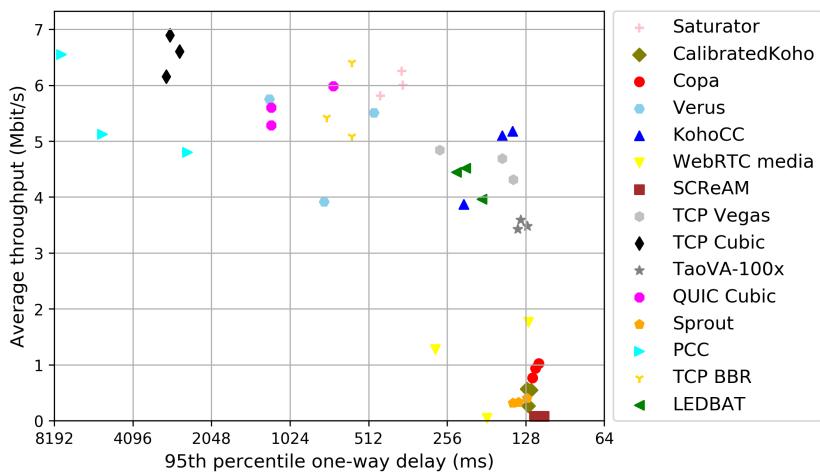
NTP offset measured against gps.ntp.br and has been applied to correct the
timestamps in logs.

```
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 AWS Brazil 2 Ethernet to Colombia ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



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



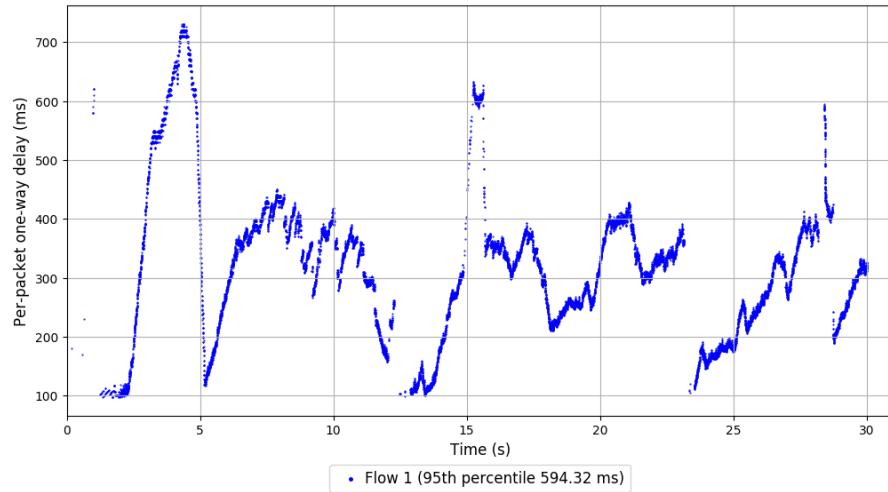
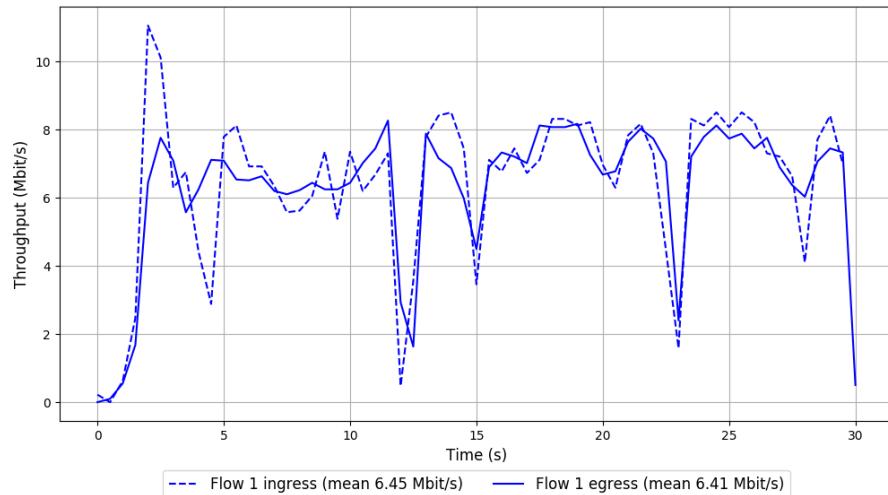
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	5.64	643.76	1.26
CalibratedKoho	3	0.46	124.60	0.12
Copa	3	0.91	117.37	0.18
TCP Cubic	3	6.55	2908.46	8.27
KohoCC	3	4.72	174.23	0.30
LEDBAT	3	4.31	214.01	0.59
PCC	3	5.49	5203.46	18.91
QUIC Cubic	3	5.62	1039.42	3.47
Saturator	3	6.03	408.17	0.71
SCReAM	3	0.08	114.17	0.16
Sprout	3	0.35	135.46	-0.03
TaoVA-100x	3	3.50	132.56	0.13
TCP Vegas	3	4.61	191.28	0.18
Verus	3	5.06	825.26	0.94
WebRTC media	3	1.03	196.45	0.12

Run 1: Statistics of TCP BBR

```
Start at: Thu, 13 Jul 2017 20:16:55 +0000
End at: Thu, 13 Jul 2017 20:17:25 +0000
Local clock offset: 0.784 ms
Remote clock offset: -5.896 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:29 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 594.322 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 594.322 ms
Loss rate: 1.04%
```

Run 1: Report of TCP BBR — Data Link

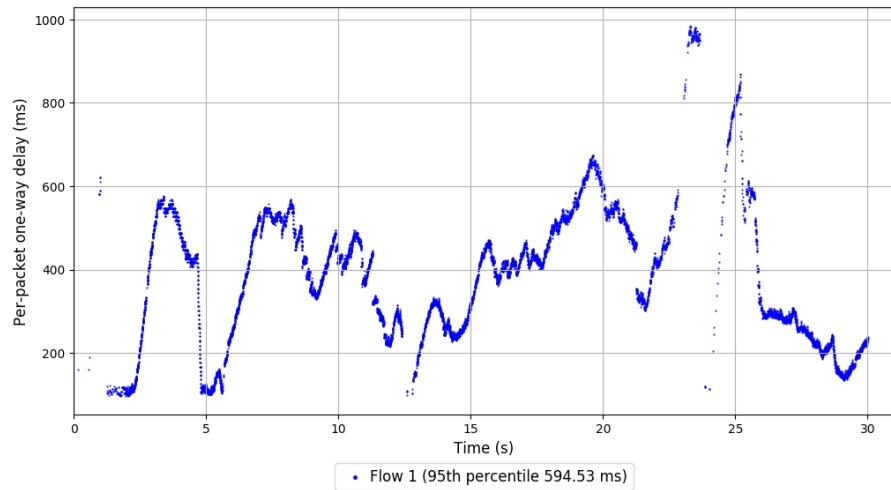
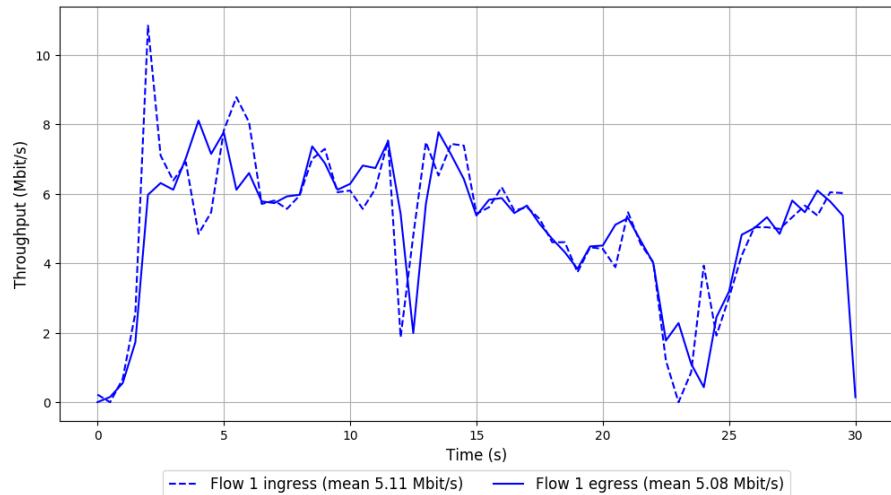


Run 2: Statistics of TCP BBR

```
Start at: Thu, 13 Jul 2017 20:33:38 +0000
End at: Thu, 13 Jul 2017 20:34:08 +0000
Local clock offset: 0.843 ms
Remote clock offset: -4.921 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:29 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.08 Mbit/s
95th percentile per-packet one-way delay: 594.533 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 5.08 Mbit/s
95th percentile per-packet one-way delay: 594.533 ms
Loss rate: 0.85%
```

Run 2: Report of TCP BBR — Data Link

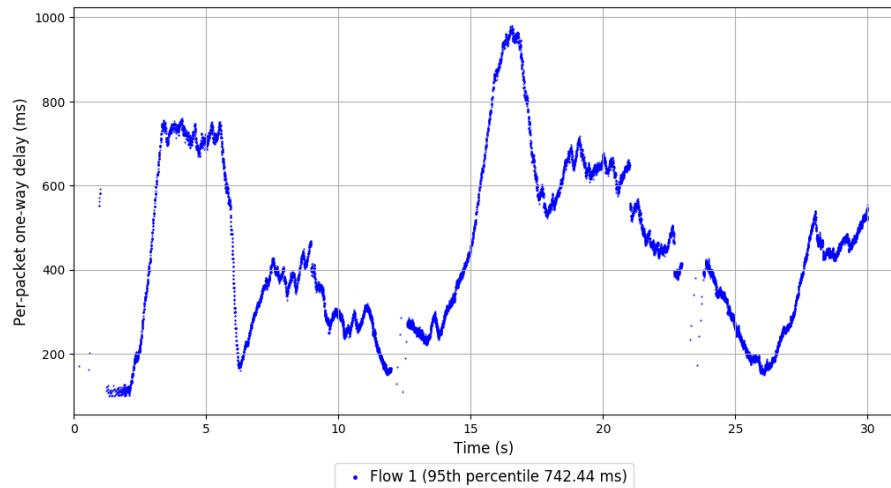
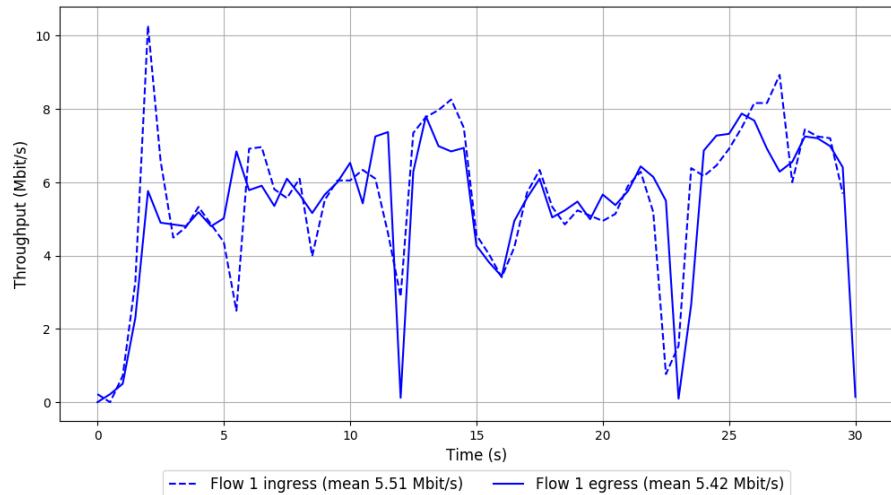


Run 3: Statistics of TCP BBR

```
Start at: Thu, 13 Jul 2017 20:50:21 +0000
End at: Thu, 13 Jul 2017 20:50:51 +0000
Local clock offset: 0.832 ms
Remote clock offset: -3.574 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:32 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 742.436 ms
Loss rate: 1.90%
-- Flow 1:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 742.436 ms
Loss rate: 1.90%
```

Run 3: Report of TCP BBR — Data Link



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

```
Start at: Thu, 13 Jul 2017 20:14:42 +0000
```

```
End at: Thu, 13 Jul 2017 20:15:12 +0000
```

```
Local clock offset: 0.799 ms
```

```
Remote clock offset: -5.884 ms
```

```
# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:32 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 0.27 Mbit/s
```

```
95th percentile per-packet one-way delay: 125.190 ms
```

```
Loss rate: 0.15%
```

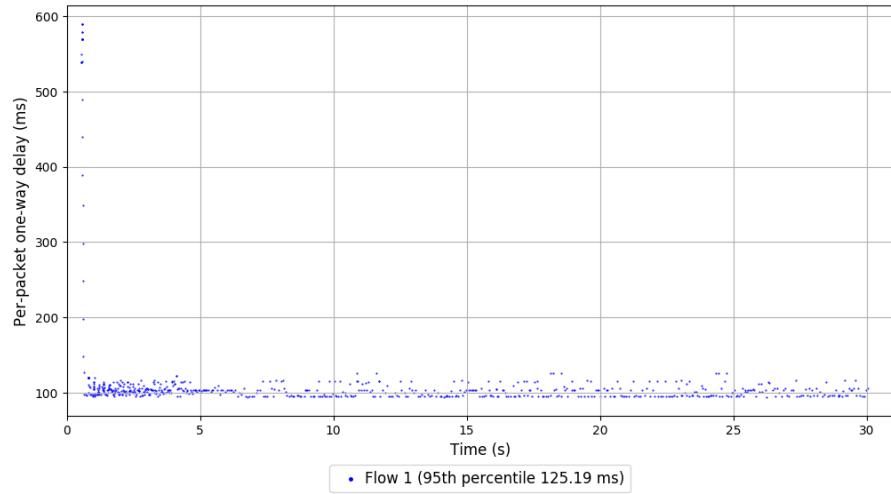
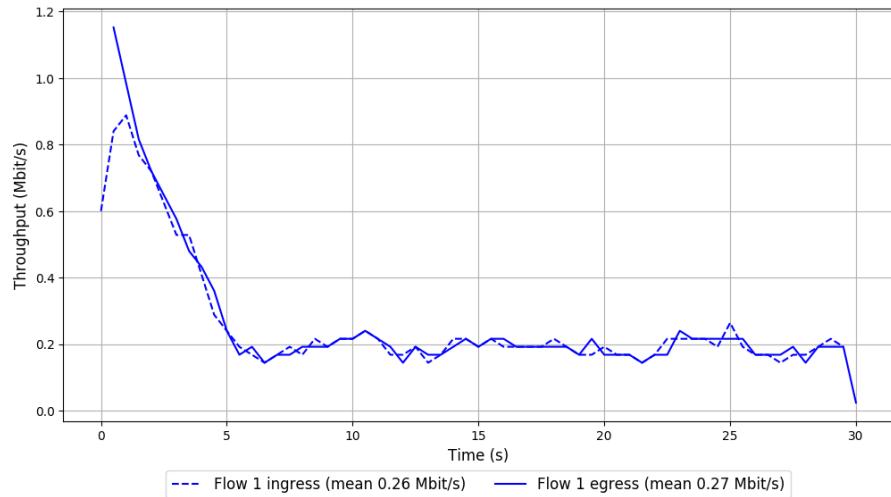
```
-- Flow 1:
```

```
Average throughput: 0.27 Mbit/s
```

```
95th percentile per-packet one-way delay: 125.190 ms
```

```
Loss rate: 0.15%
```

Run 1: Report of CalibratedKoho — Data Link

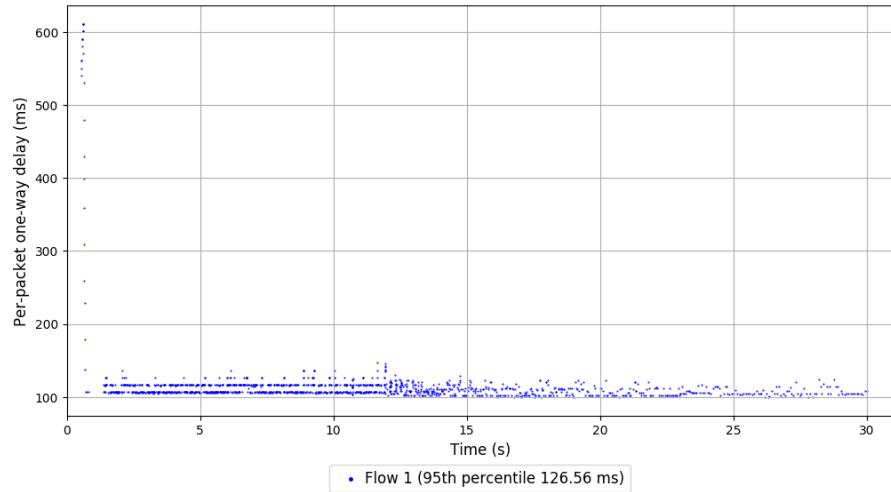
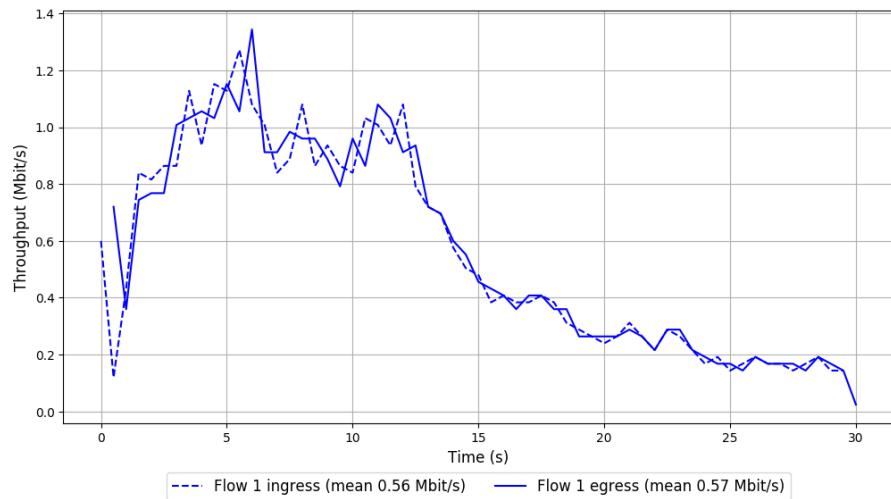


Run 2: Statistics of CalibratedKoho

```
Start at: Thu, 13 Jul 2017 20:31:25 +0000
End at: Thu, 13 Jul 2017 20:31:55 +0000
Local clock offset: 0.879 ms
Remote clock offset: -4.959 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:32 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 126.563 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 126.563 ms
Loss rate: 0.00%
```

Run 2: Report of CalibratedKoho — Data Link

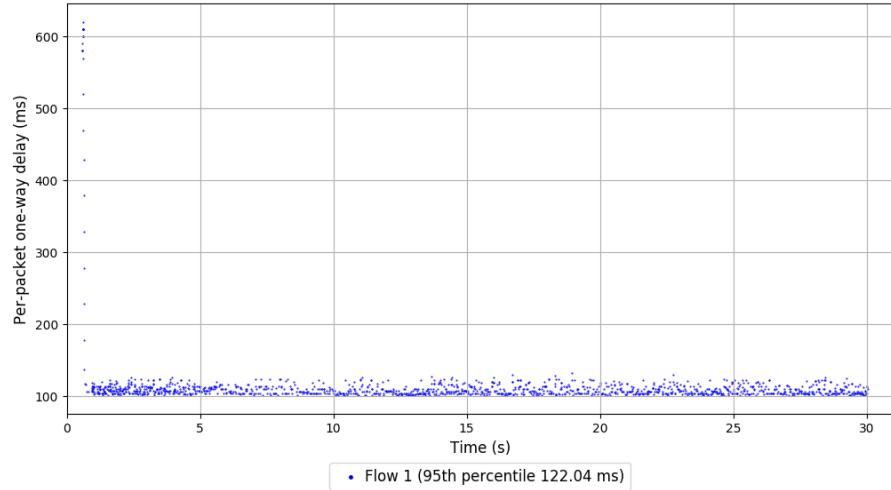
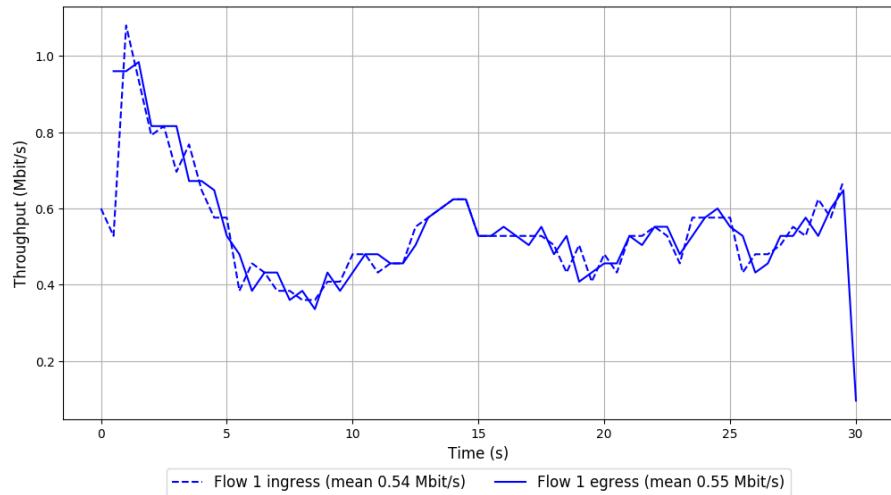


```
Run 3: Statistics of CalibratedKoho
```

```
Start at: Thu, 13 Jul 2017 20:48:08 +0000
End at: Thu, 13 Jul 2017 20:48:38 +0000
Local clock offset: 0.832 ms
Remote clock offset: -3.681 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:32 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 122.043 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 122.043 ms
Loss rate: 0.22%
```

Run 3: Report of CalibratedKoho — Data Link

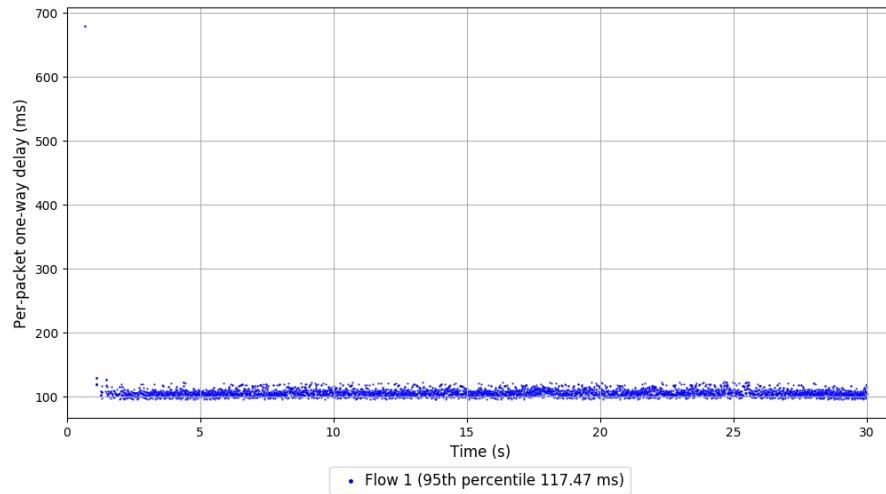
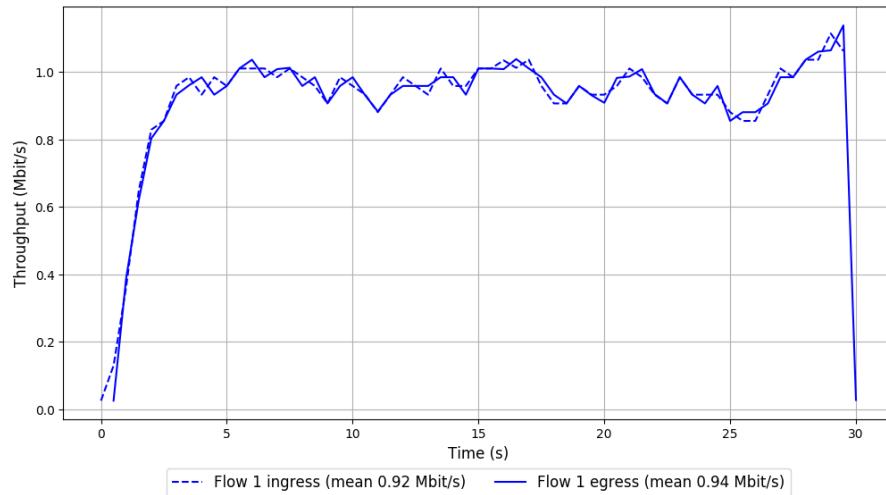


Run 1: Statistics of Copa

```
Start at: Thu, 13 Jul 2017 20:19:10 +0000
End at: Thu, 13 Jul 2017 20:19:40 +0000
Local clock offset: 0.677 ms
Remote clock offset: -6.164 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 117.468 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 117.468 ms
Loss rate: 0.24%
```

Run 1: Report of Copa — Data Link

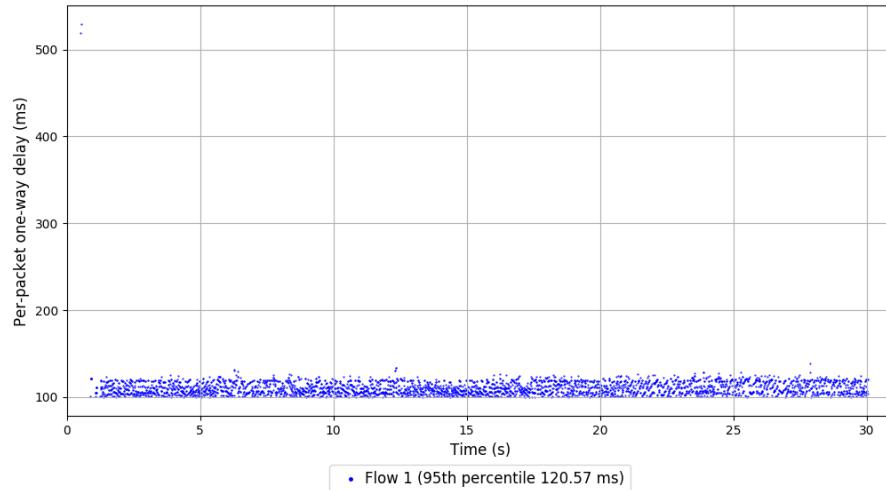
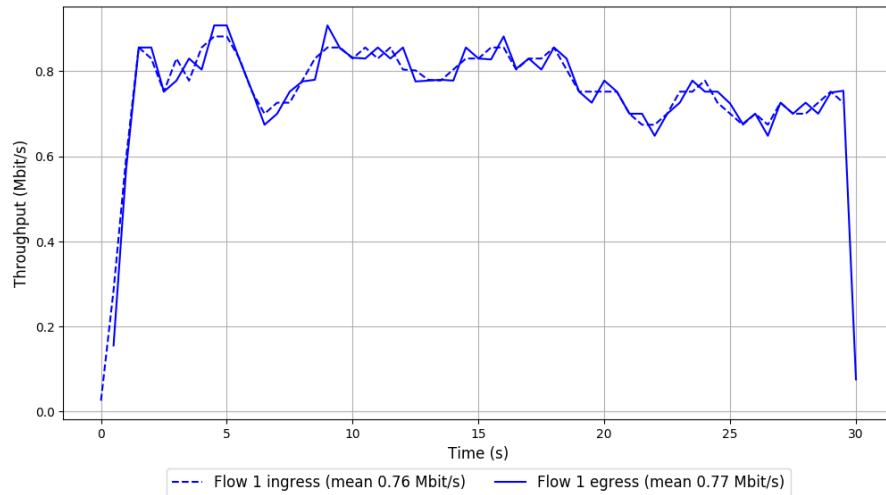


Run 2: Statistics of Copa

```
Start at: Thu, 13 Jul 2017 20:35:52 +0000
End at: Thu, 13 Jul 2017 20:36:22 +0000
Local clock offset: 0.869 ms
Remote clock offset: -4.409 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:33 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 120.568 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 120.568 ms
Loss rate: 0.18%
```

Run 2: Report of Copa — Data Link

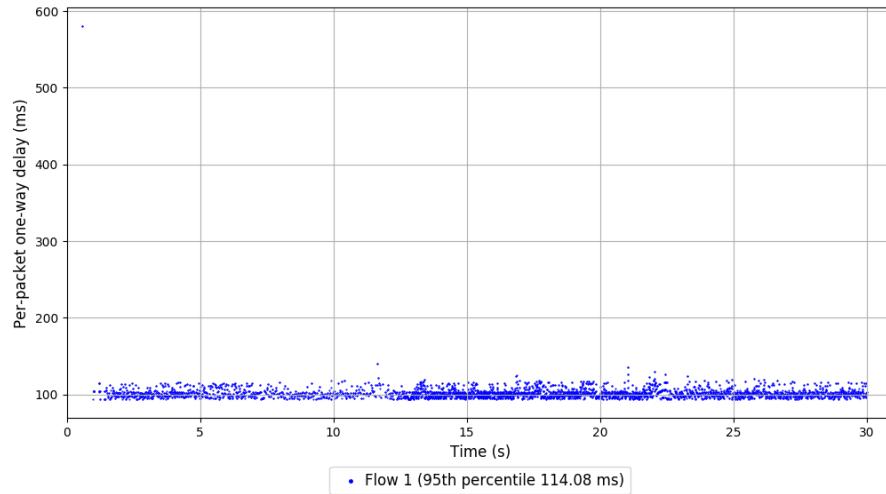
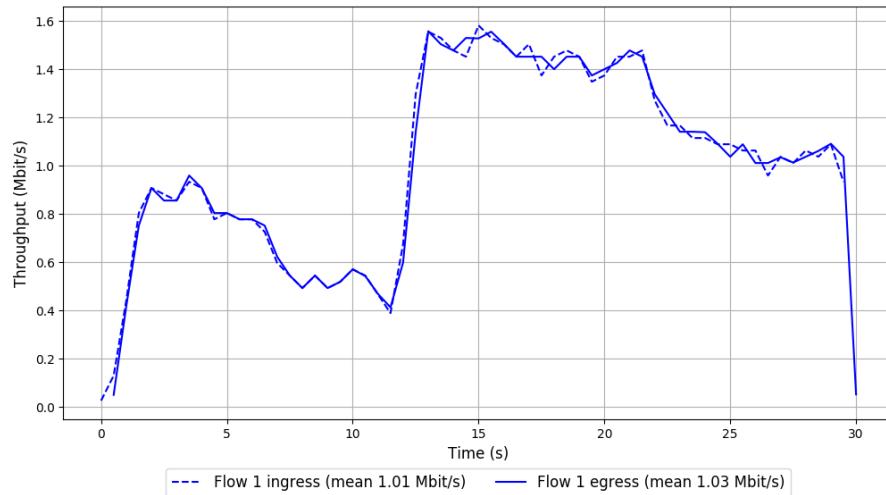


Run 3: Statistics of Copa

```
Start at: Thu, 13 Jul 2017 20:52:36 +0000
End at: Thu, 13 Jul 2017 20:53:06 +0000
Local clock offset: 0.825 ms
Remote clock offset: -3.7 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 114.085 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 114.085 ms
Loss rate: 0.13%
```

Run 3: Report of Copa — Data Link



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

```
Start at: Thu, 13 Jul 2017 20:12:28 +0000
```

```
End at: Thu, 13 Jul 2017 20:12:58 +0000
```

```
Local clock offset: 0.736 ms
```

```
Remote clock offset: -5.797 ms
```

```
# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:35 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 6.61 Mbit/s
```

```
95th percentile per-packet one-way delay: 2713.380 ms
```

```
Loss rate: 8.52%
```

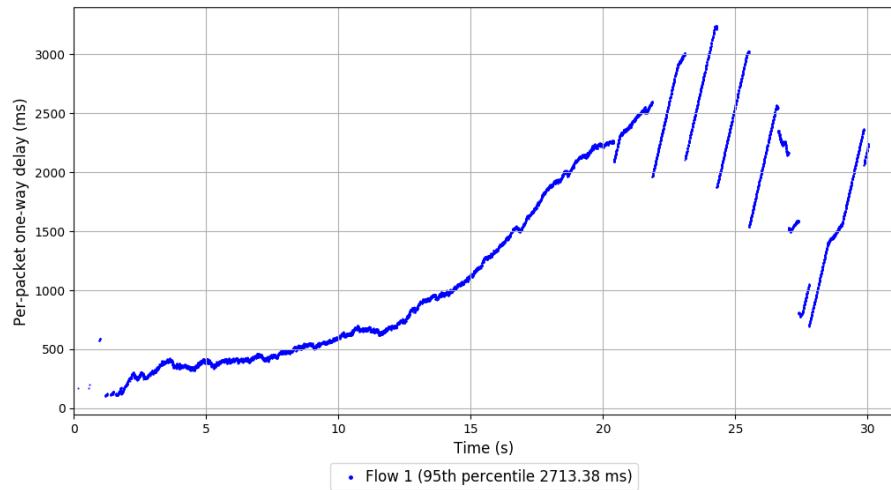
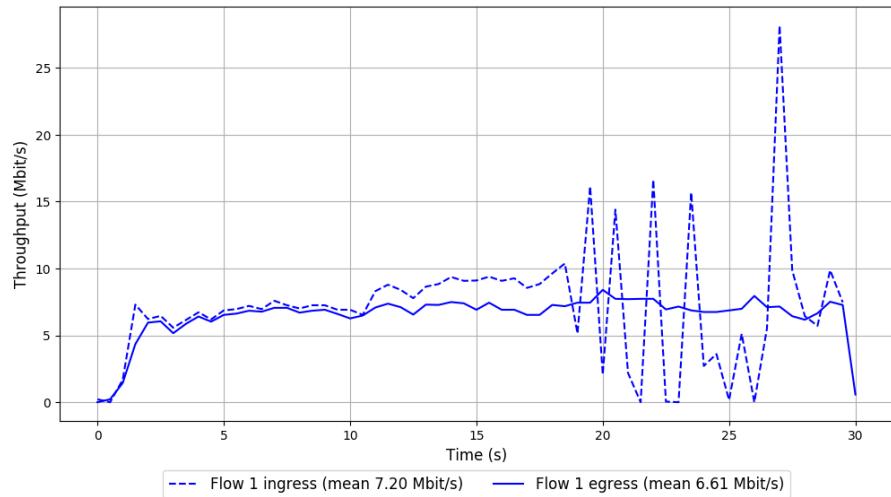
```
-- Flow 1:
```

```
Average throughput: 6.61 Mbit/s
```

```
95th percentile per-packet one-way delay: 2713.380 ms
```

```
Loss rate: 8.52%
```

Run 1: Report of TCP Cubic — Data Link

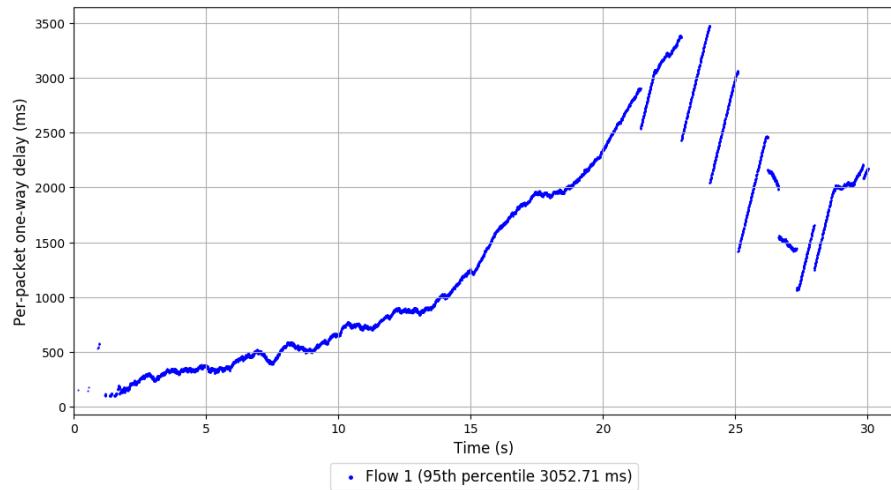
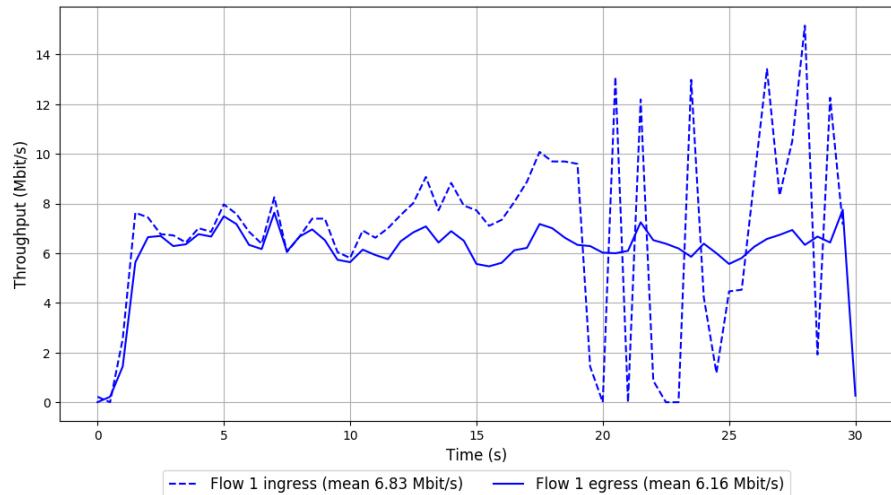


Run 2: Statistics of TCP Cubic

```
Start at: Thu, 13 Jul 2017 20:29:11 +0000
End at: Thu, 13 Jul 2017 20:29:41 +0000
Local clock offset: 0.756 ms
Remote clock offset: -5.241 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:37 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.16 Mbit/s
95th percentile per-packet one-way delay: 3052.710 ms
Loss rate: 10.02%
-- Flow 1:
Average throughput: 6.16 Mbit/s
95th percentile per-packet one-way delay: 3052.710 ms
Loss rate: 10.02%
```

Run 2: Report of TCP Cubic — Data Link

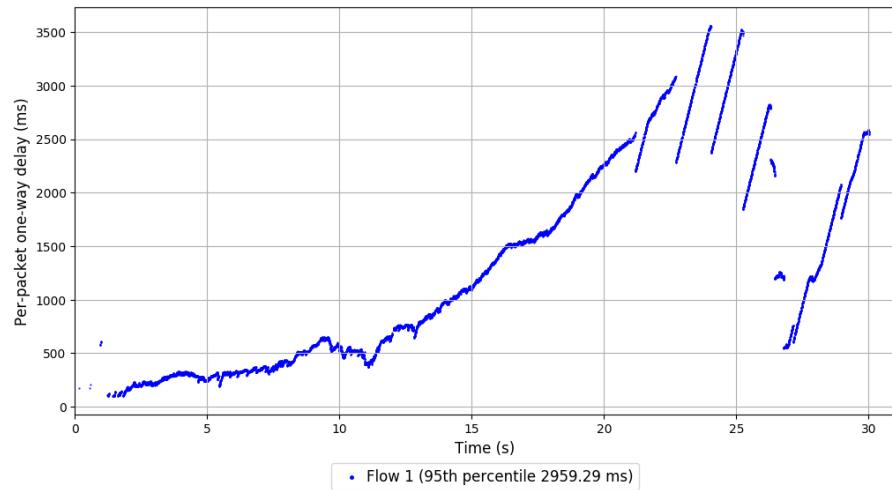
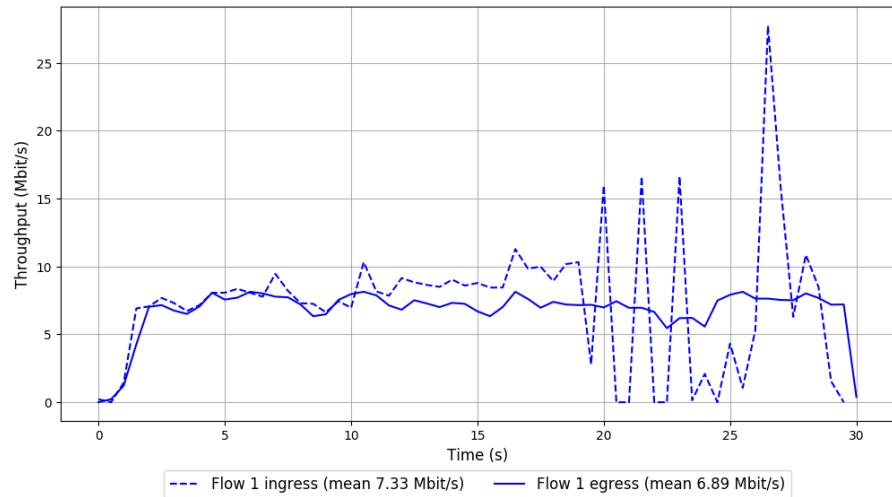


Run 3: Statistics of TCP Cubic

```
Start at: Thu, 13 Jul 2017 20:45:54 +0000
End at: Thu, 13 Jul 2017 20:46:24 +0000
Local clock offset: 0.846 ms
Remote clock offset: -3.894 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:37 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 2959.294 ms
Loss rate: 6.28%
-- Flow 1:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 2959.294 ms
Loss rate: 6.28%
```

Run 3: Report of TCP Cubic — Data Link

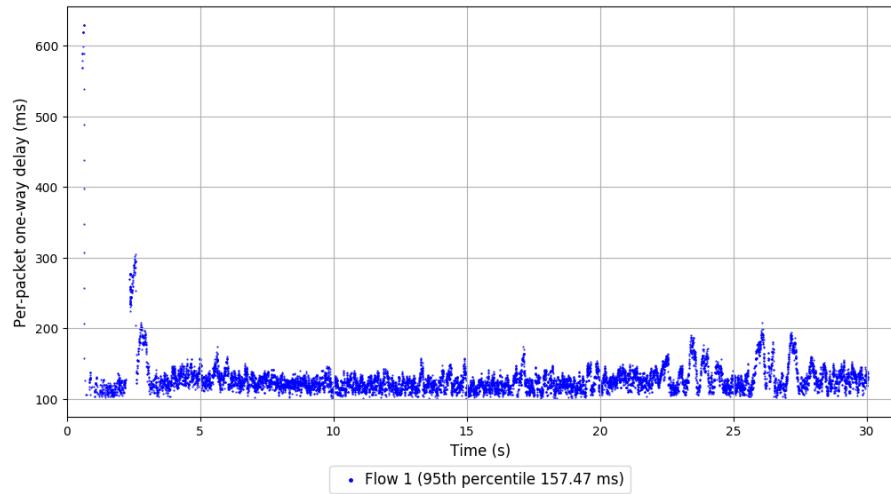
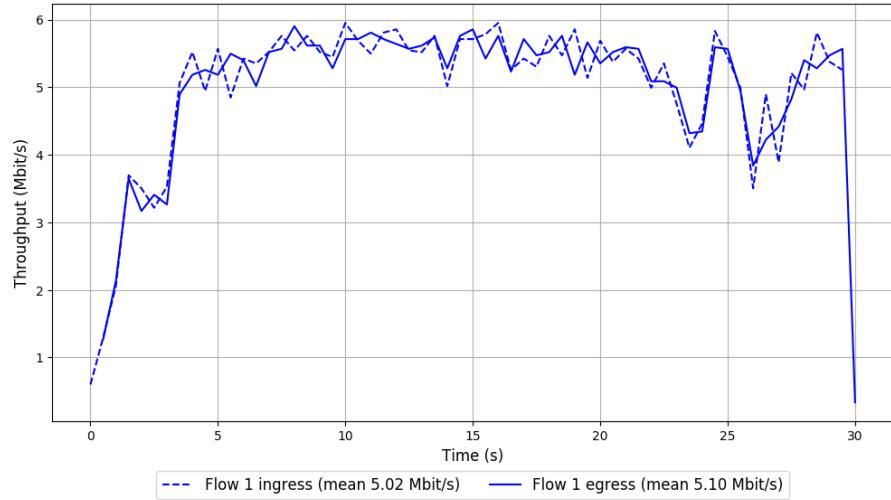


```
Run 1: Statistics of KohoCC
```

```
Start at: Thu, 13 Jul 2017 20:22:30 +0000
End at: Thu, 13 Jul 2017 20:23:00 +0000
Local clock offset: 0.823 ms
Remote clock offset: -5.698 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:38 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 157.467 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 157.467 ms
Loss rate: 0.26%
```

Run 1: Report of KohoCC — Data Link

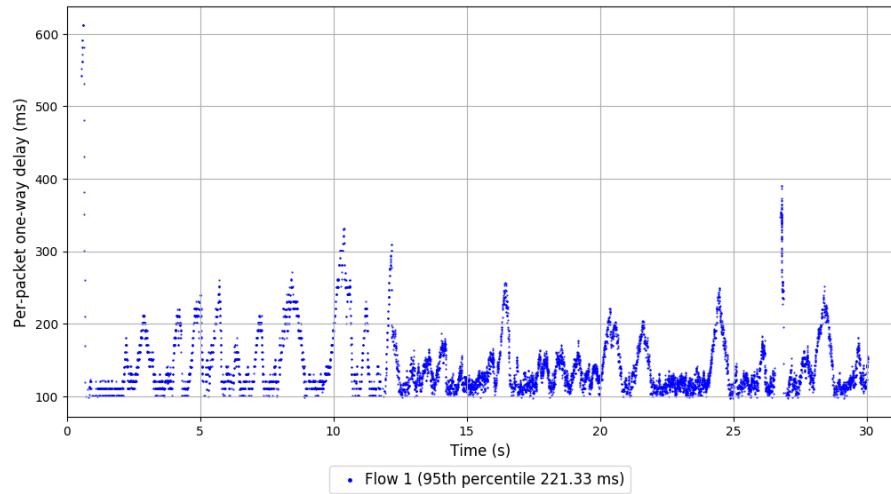
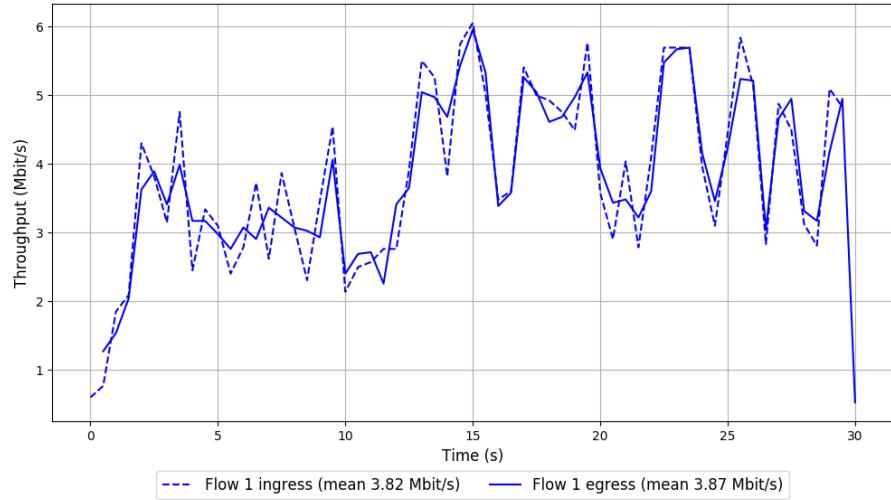


Run 2: Statistics of KohoCC

```
Start at: Thu, 13 Jul 2017 20:39:12 +0000
End at: Thu, 13 Jul 2017 20:39:42 +0000
Local clock offset: 0.863 ms
Remote clock offset: -4.465 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:39 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.87 Mbit/s
95th percentile per-packet one-way delay: 221.329 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 3.87 Mbit/s
95th percentile per-packet one-way delay: 221.329 ms
Loss rate: 0.42%
```

Run 2: Report of KohoCC — Data Link

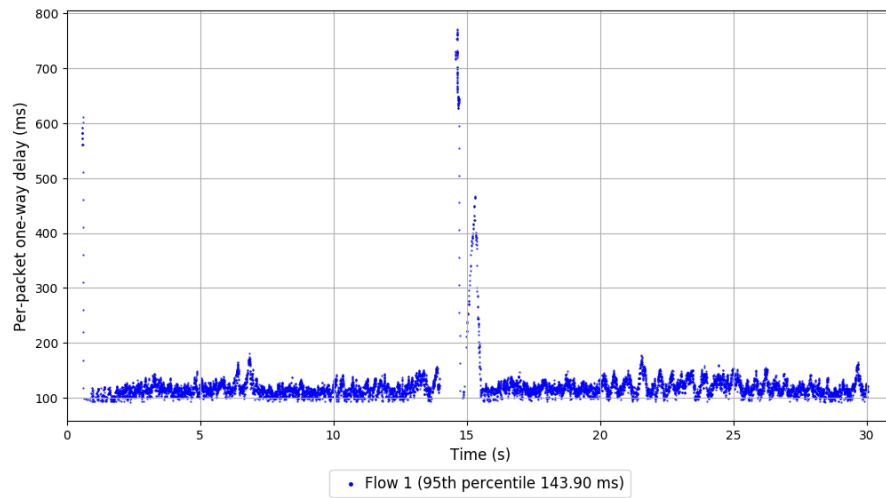
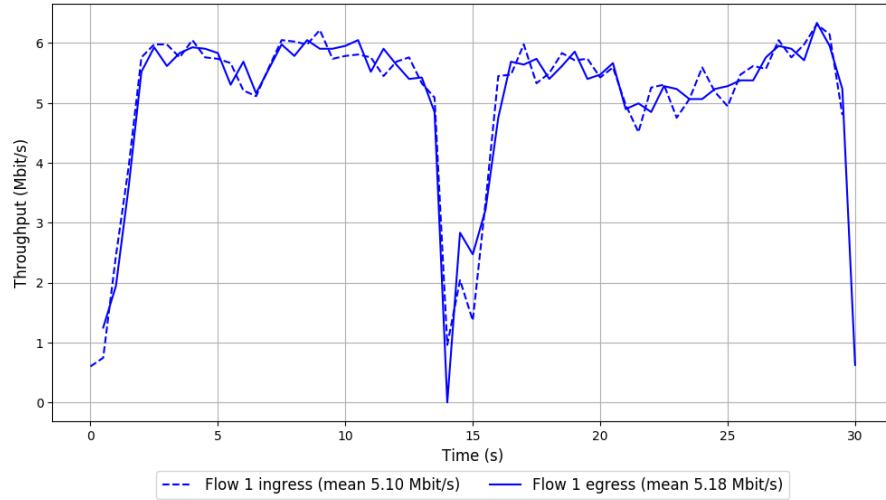


Run 3: Statistics of KohoCC

```
Start at: Thu, 13 Jul 2017 20:55:56 +0000
End at: Thu, 13 Jul 2017 20:56:26 +0000
Local clock offset: 0.883 ms
Remote clock offset: -3.354 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.18 Mbit/s
95th percentile per-packet one-way delay: 143.904 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 5.18 Mbit/s
95th percentile per-packet one-way delay: 143.904 ms
Loss rate: 0.23%
```

Run 3: Report of KohoCC — Data Link

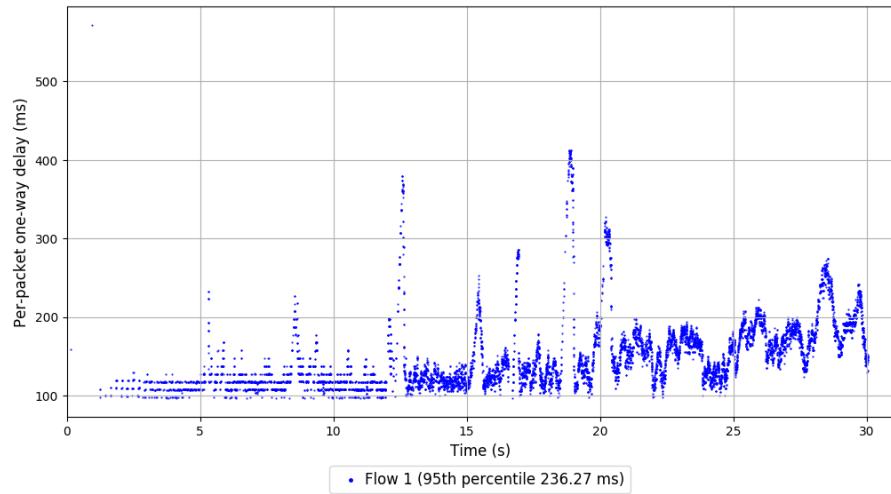
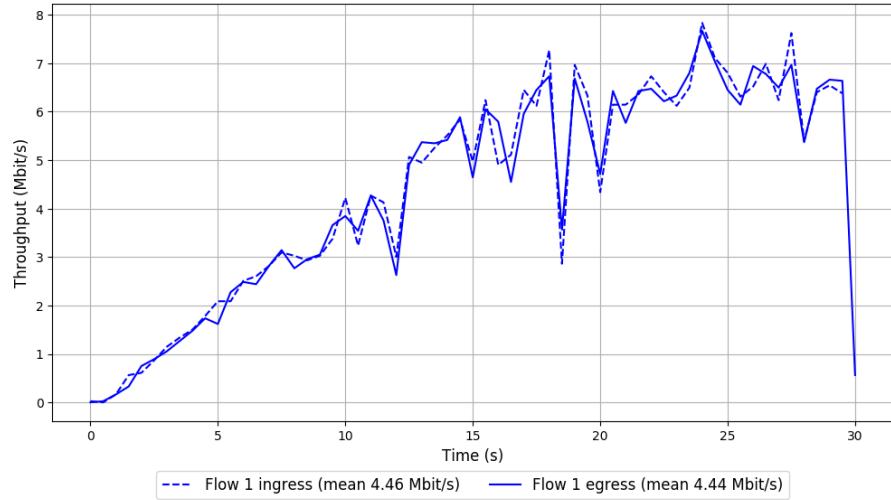


```
Run 1: Statistics of LEDBAT
```

```
Start at: Thu, 13 Jul 2017 20:11:21 +0000
End at: Thu, 13 Jul 2017 20:11:51 +0000
Local clock offset: 0.818 ms
Remote clock offset: -5.554 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:41 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.44 Mbit/s
95th percentile per-packet one-way delay: 236.266 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 4.44 Mbit/s
95th percentile per-packet one-way delay: 236.266 ms
Loss rate: 0.64%
```

Run 1: Report of LEDBAT — Data Link

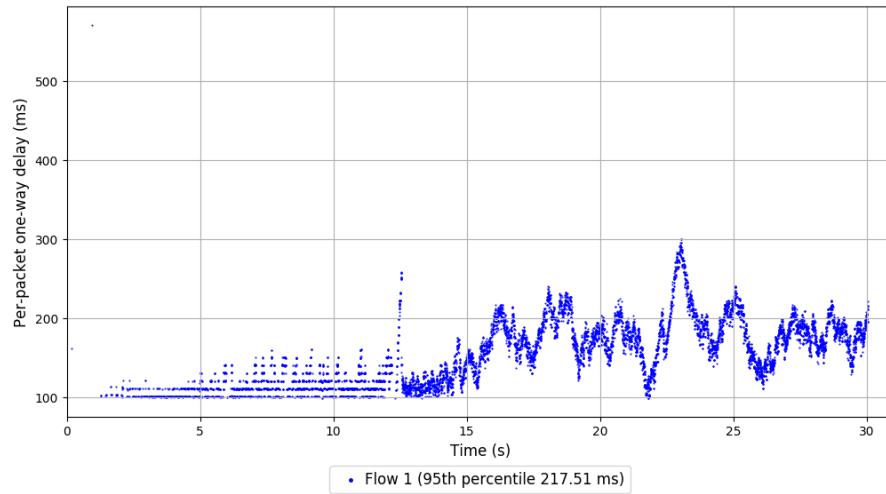
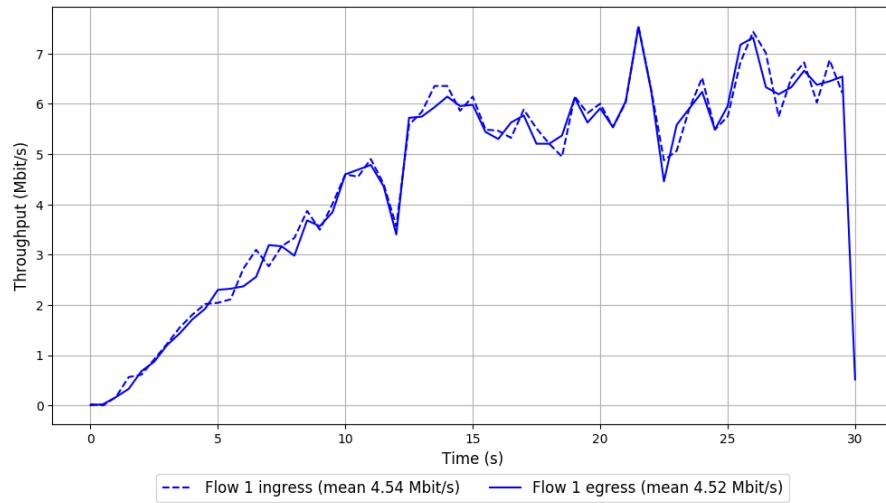


Run 2: Statistics of LEDBAT

```
Start at: Thu, 13 Jul 2017 20:28:04 +0000
End at: Thu, 13 Jul 2017 20:28:34 +0000
Local clock offset: 0.837 ms
Remote clock offset: -5.131 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:42 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.52 Mbit/s
95th percentile per-packet one-way delay: 217.512 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 4.52 Mbit/s
95th percentile per-packet one-way delay: 217.512 ms
Loss rate: 0.66%
```

Run 2: Report of LEDBAT — Data Link

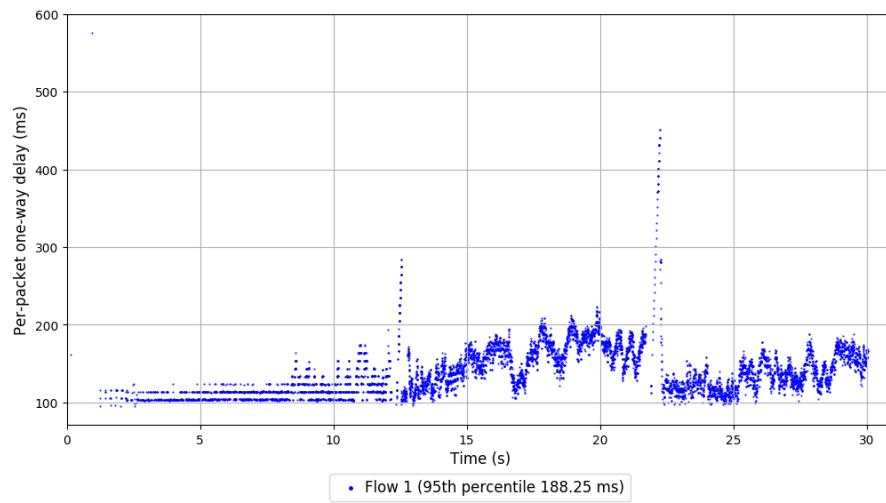
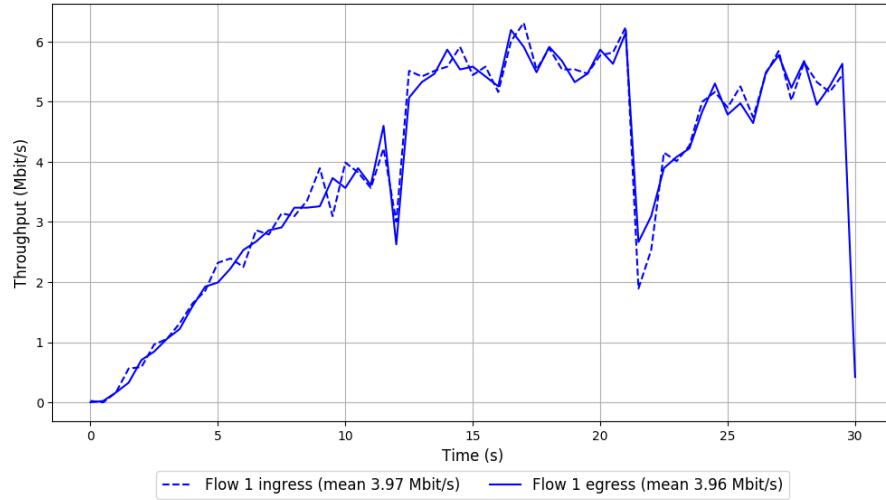


Run 3: Statistics of LEDBAT

```
Start at: Thu, 13 Jul 2017 20:44:47 +0000
End at: Thu, 13 Jul 2017 20:45:17 +0000
Local clock offset: 0.863 ms
Remote clock offset: -4.084 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:42 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.96 Mbit/s
95th percentile per-packet one-way delay: 188.250 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 3.96 Mbit/s
95th percentile per-packet one-way delay: 188.250 ms
Loss rate: 0.48%
```

Run 3: Report of LEDBAT — Data Link

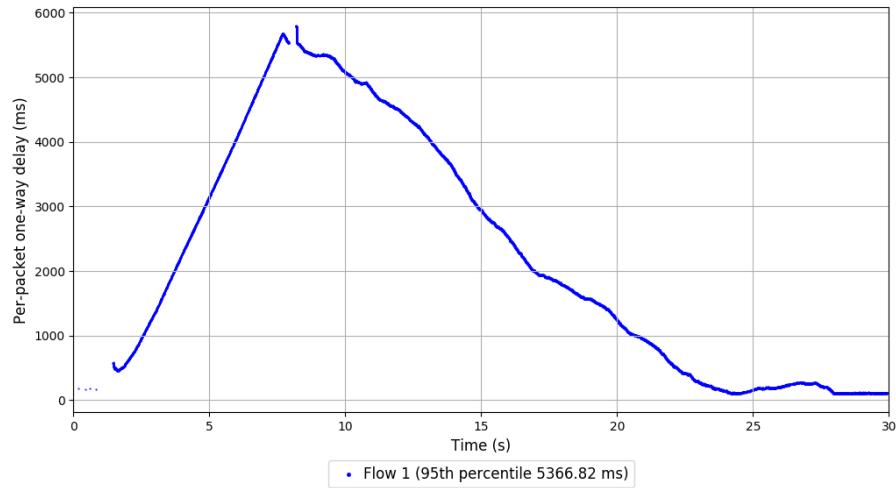
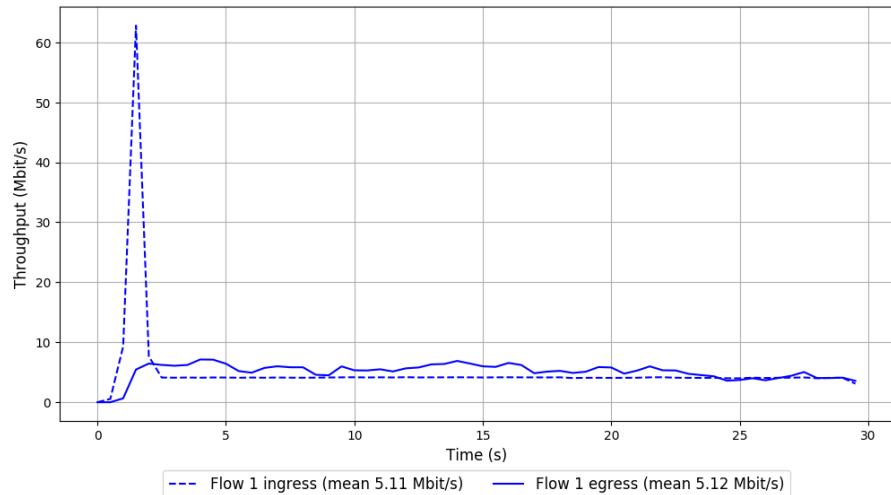


```
Run 1: Statistics of PCC
```

```
Start at: Thu, 13 Jul 2017 20:26:57 +0000
End at: Thu, 13 Jul 2017 20:27:27 +0000
Local clock offset: 0.832 ms
Remote clock offset: -5.058 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:44 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.12 Mbit/s
95th percentile per-packet one-way delay: 5366.819 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 5.12 Mbit/s
95th percentile per-packet one-way delay: 5366.819 ms
Loss rate: 0.12%
```

Run 1: Report of PCC — Data Link

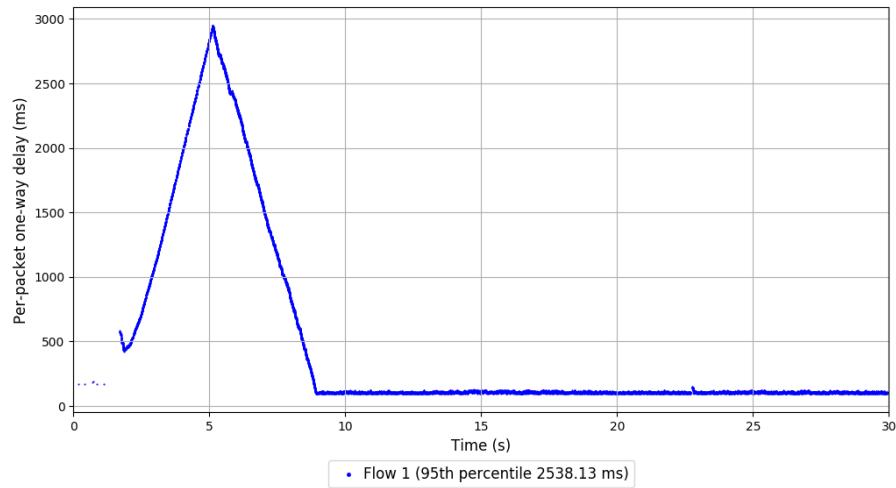
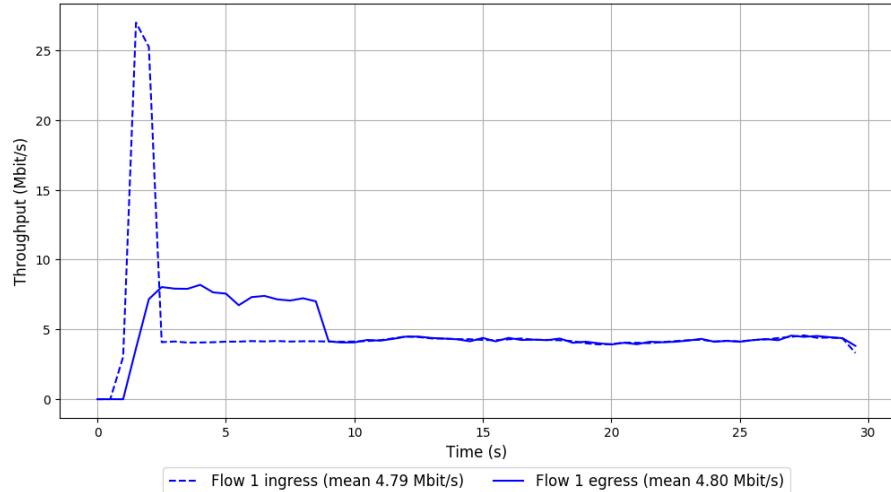


Run 2: Statistics of PCC

```
Start at: Thu, 13 Jul 2017 20:43:40 +0000
End at: Thu, 13 Jul 2017 20:44:10 +0000
Local clock offset: 0.88 ms
Remote clock offset: -3.757 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:44 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.80 Mbit/s
95th percentile per-packet one-way delay: 2538.127 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 4.80 Mbit/s
95th percentile per-packet one-way delay: 2538.127 ms
Loss rate: 0.14%
```

Run 2: Report of PCC — Data Link

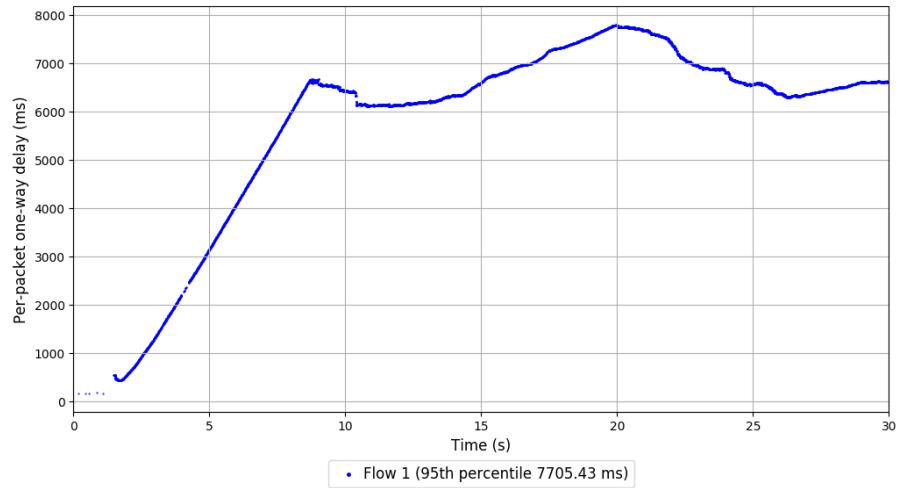
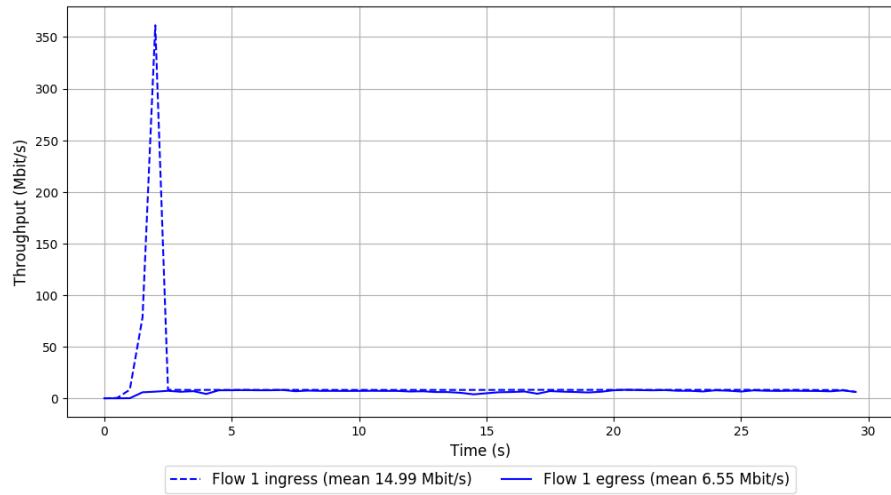


Run 3: Statistics of PCC

```
Start at: Thu, 13 Jul 2017 21:00:25 +0000
End at: Thu, 13 Jul 2017 21:00:55 +0000
Local clock offset: 0.799 ms
Remote clock offset: -2.865 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:46 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.55 Mbit/s
95th percentile per-packet one-way delay: 7705.431 ms
Loss rate: 56.46%
-- Flow 1:
Average throughput: 6.55 Mbit/s
95th percentile per-packet one-way delay: 7705.431 ms
Loss rate: 56.46%
```

Run 3: Report of PCC — Data Link



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

```
Start at: Thu, 13 Jul 2017 20:20:16 +0000
```

```
End at: Thu, 13 Jul 2017 20:20:46 +0000
```

```
Local clock offset: 0.739 ms
```

```
Remote clock offset: -5.845 ms
```

```
# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:46 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 5.60 Mbit/s
```

```
95th percentile per-packet one-way delay: 1210.717 ms
```

```
Loss rate: 4.19%
```

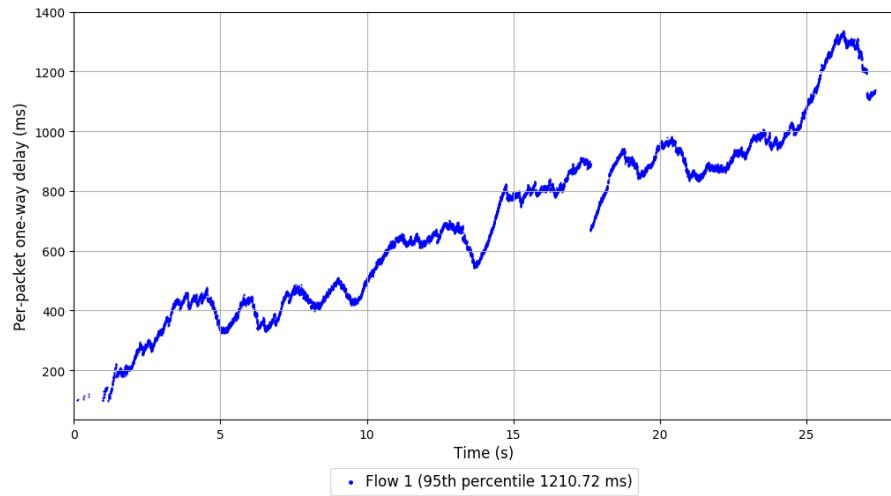
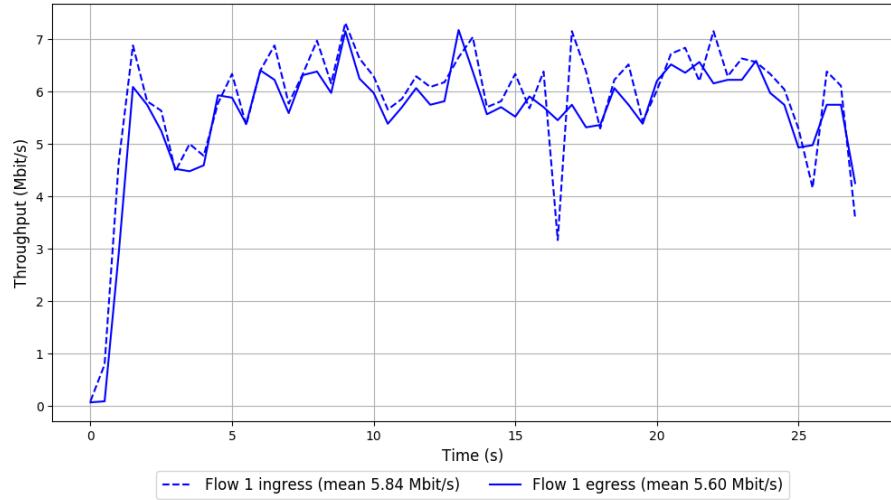
```
-- Flow 1:
```

```
Average throughput: 5.60 Mbit/s
```

```
95th percentile per-packet one-way delay: 1210.717 ms
```

```
Loss rate: 4.19%
```

Run 1: Report of QUIC Cubic — Data Link

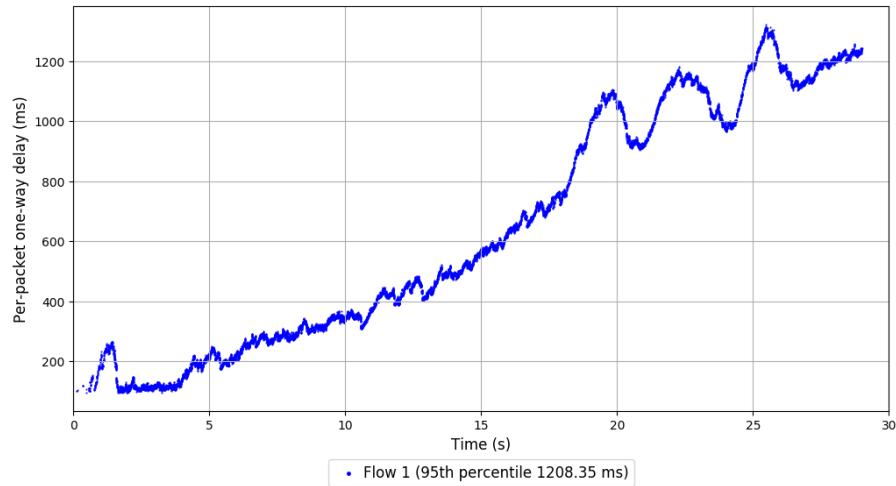
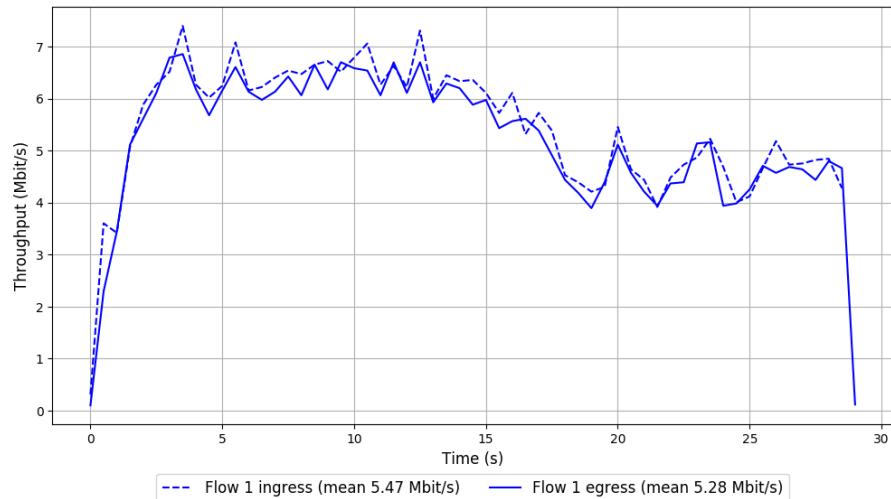


Run 2: Statistics of QUIC Cubic

```
Start at: Thu, 13 Jul 2017 20:36:59 +0000
End at: Thu, 13 Jul 2017 20:37:29 +0000
Local clock offset: 0.86 ms
Remote clock offset: -4.765 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:47 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.28 Mbit/s
95th percentile per-packet one-way delay: 1208.350 ms
Loss rate: 3.52%
-- Flow 1:
Average throughput: 5.28 Mbit/s
95th percentile per-packet one-way delay: 1208.350 ms
Loss rate: 3.52%
```

Run 2: Report of QUIC Cubic — Data Link

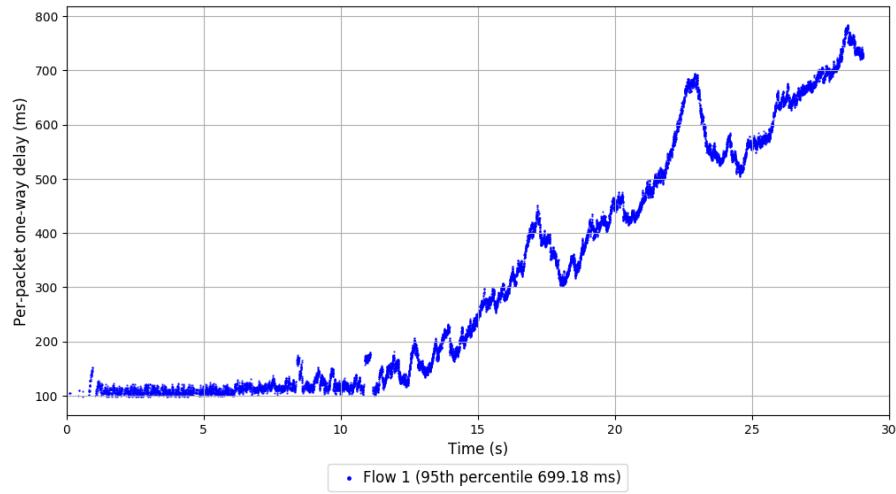
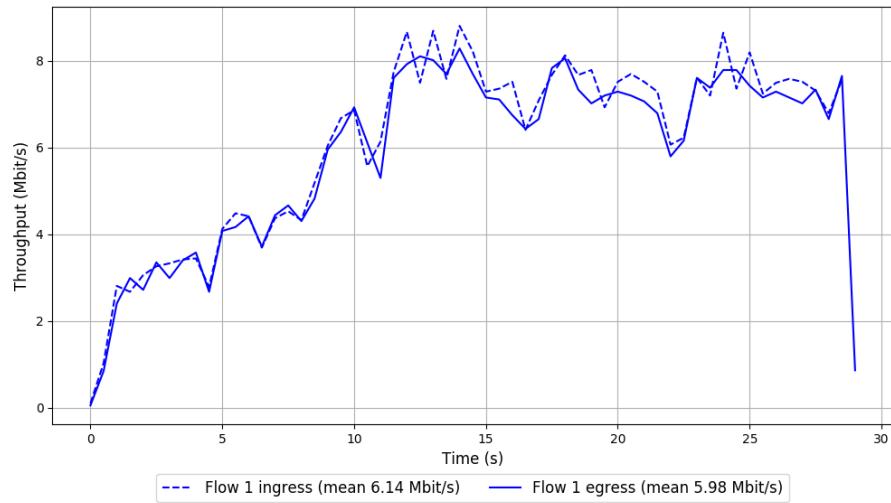


Run 3: Statistics of QUIC Cubic

```
Start at: Thu, 13 Jul 2017 20:53:42 +0000
End at: Thu, 13 Jul 2017 20:54:12 +0000
Local clock offset: 0.833 ms
Remote clock offset: -3.314 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:48 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.98 Mbit/s
95th percentile per-packet one-way delay: 699.185 ms
Loss rate: 2.71%
-- Flow 1:
Average throughput: 5.98 Mbit/s
95th percentile per-packet one-way delay: 699.185 ms
Loss rate: 2.71%
```

Run 3: Report of QUIC Cubic — Data Link

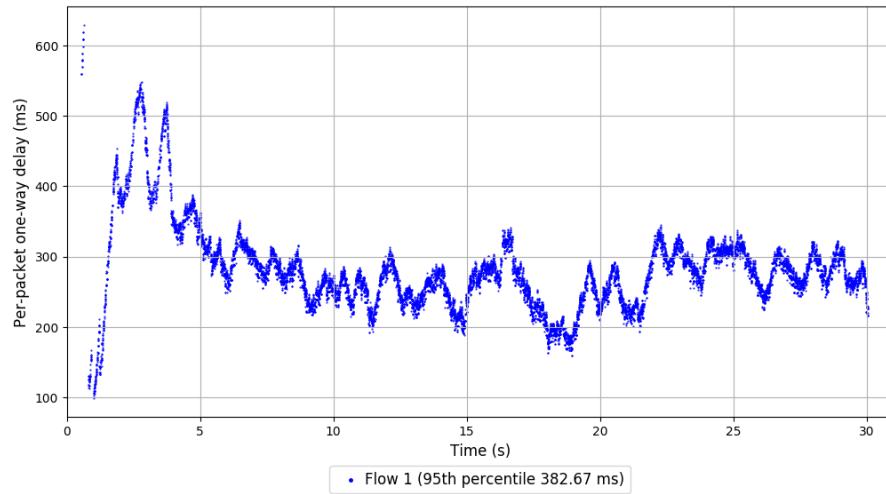
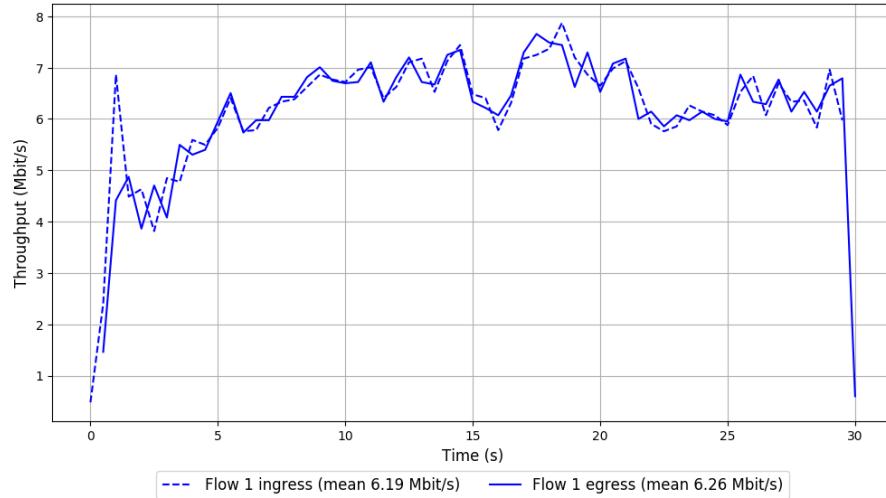


Run 1: Statistics of Saturator

```
Start at: Thu, 13 Jul 2017 20:18:02 +0000
End at: Thu, 13 Jul 2017 20:18:32 +0000
Local clock offset: 0.779 ms
Remote clock offset: -5.742 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:49 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 382.673 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 382.673 ms
Loss rate: 0.56%
```

Run 1: Report of Saturator — Data Link

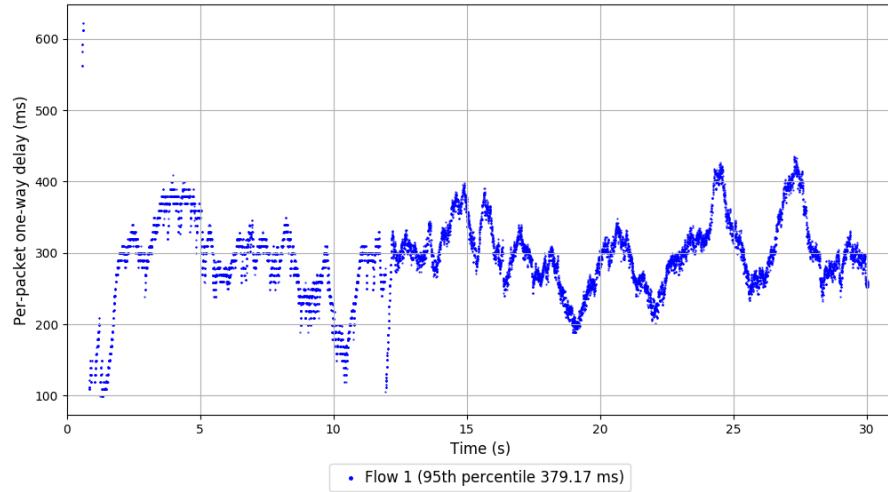
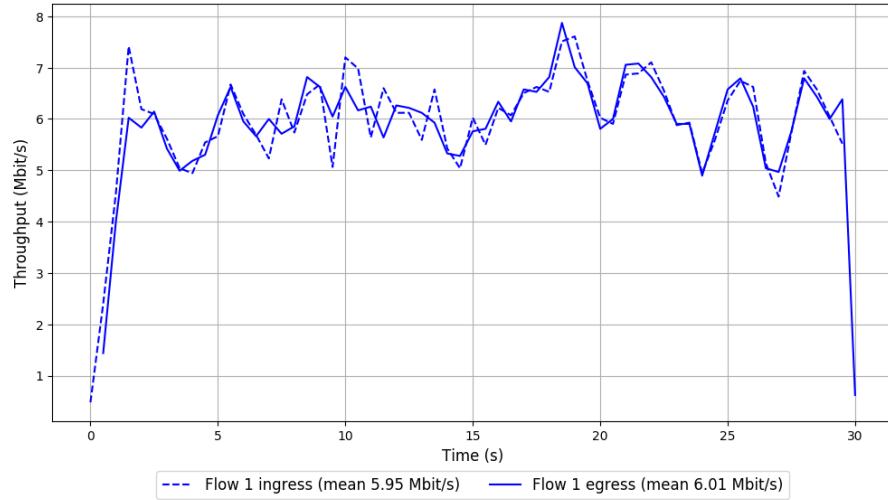


Run 2: Statistics of Saturator

```
Start at: Thu, 13 Jul 2017 20:34:45 +0000
End at: Thu, 13 Jul 2017 20:35:15 +0000
Local clock offset: 0.87 ms
Remote clock offset: -4.711 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:50 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.01 Mbit/s
95th percentile per-packet one-way delay: 379.166 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 6.01 Mbit/s
95th percentile per-packet one-way delay: 379.166 ms
Loss rate: 0.65%
```

Run 2: Report of Saturator — Data Link

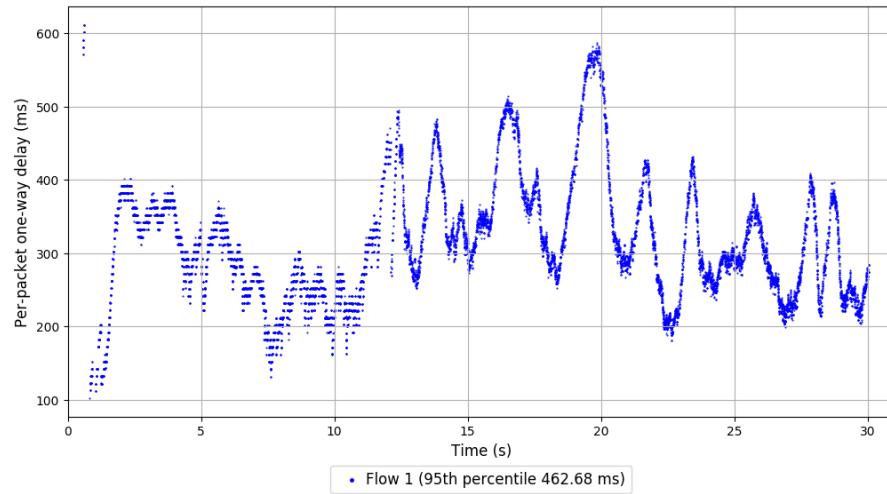
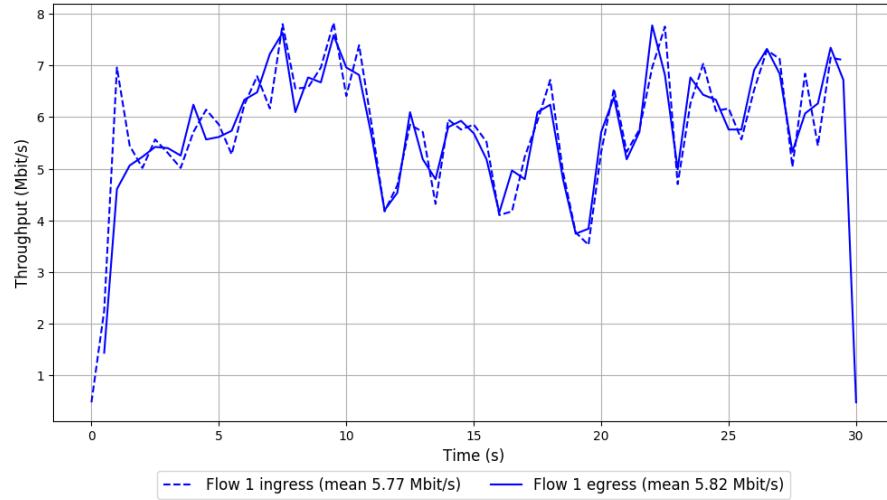


Run 3: Statistics of Saturator

```
Start at: Thu, 13 Jul 2017 20:51:28 +0000
End at: Thu, 13 Jul 2017 20:51:58 +0000
Local clock offset: 0.811 ms
Remote clock offset: -3.692 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:50 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.82 Mbit/s
95th percentile per-packet one-way delay: 462.684 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 5.82 Mbit/s
95th percentile per-packet one-way delay: 462.684 ms
Loss rate: 0.91%
```

Run 3: Report of Saturator — Data Link

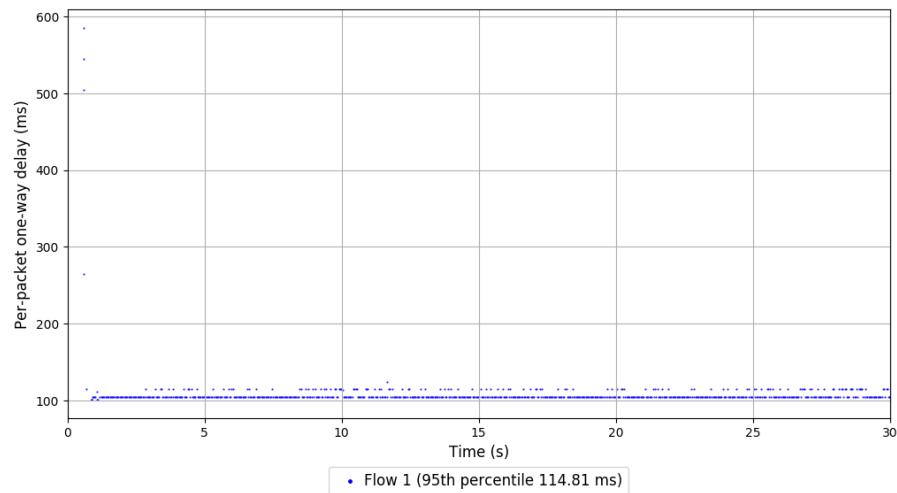
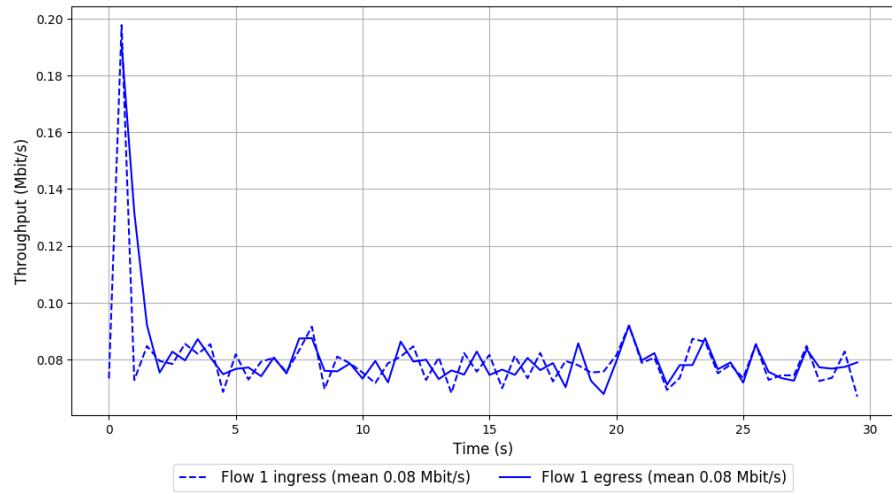


```
Run 1: Statistics of SCReAM
```

```
Start at: Thu, 13 Jul 2017 20:15:49 +0000
End at: Thu, 13 Jul 2017 20:16:19 +0000
Local clock offset: 0.812 ms
Remote clock offset: -6.083 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:51 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 114.812 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 114.812 ms
Loss rate: 0.24%
```

Run 1: Report of SCReAM — Data Link

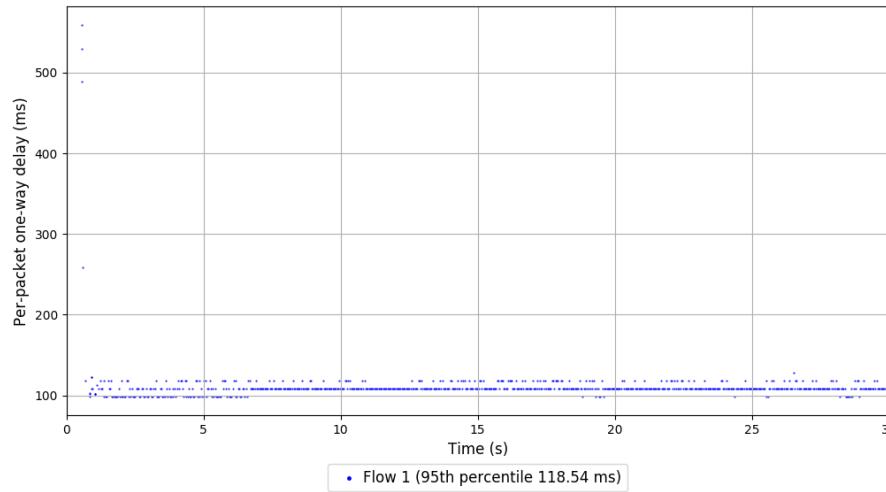
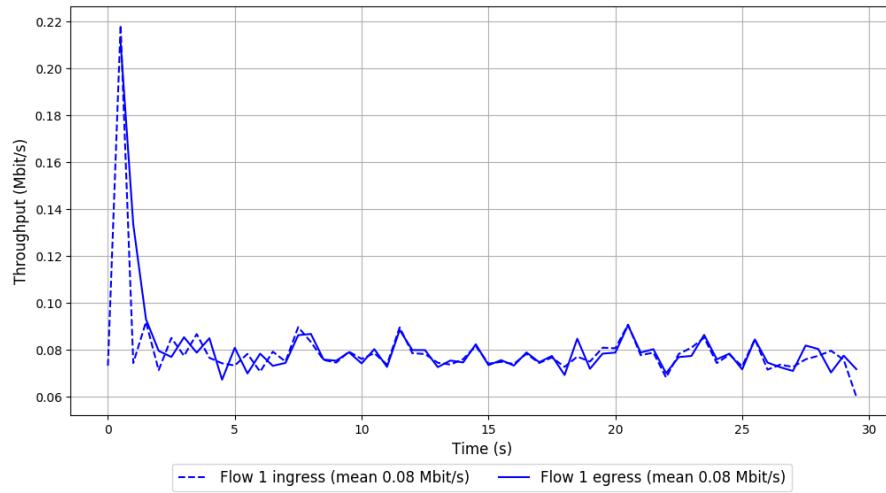


Run 2: Statistics of SCReAM

```
Start at: Thu, 13 Jul 2017 20:32:31 +0000
End at: Thu, 13 Jul 2017 20:33:01 +0000
Local clock offset: 0.85 ms
Remote clock offset: -4.627 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:51 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 118.538 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 118.538 ms
Loss rate: 0.13%
```

Run 2: Report of SCReAM — Data Link

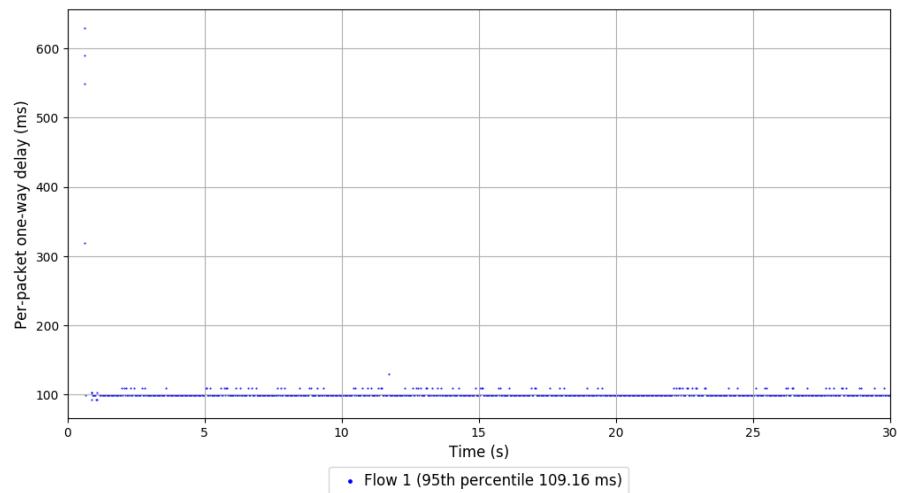
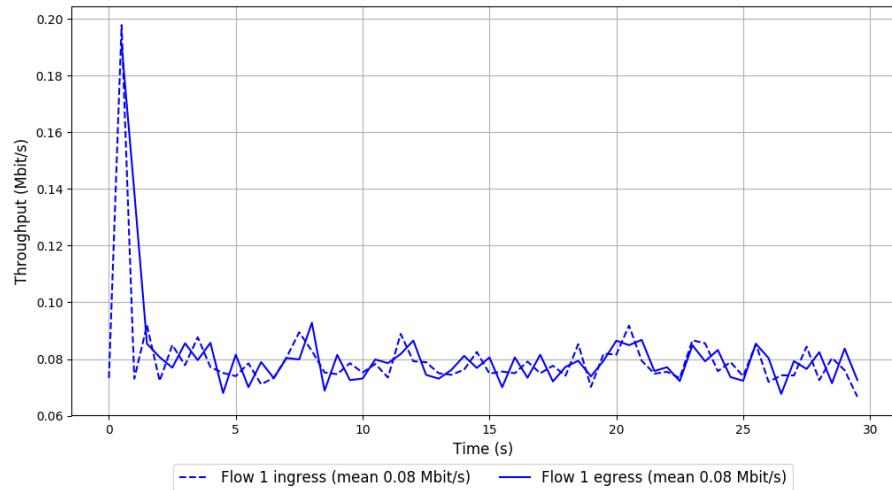


Run 3: Statistics of SCReAM

```
Start at: Thu, 13 Jul 2017 20:49:14 +0000
End at: Thu, 13 Jul 2017 20:49:44 +0000
Local clock offset: 0.821 ms
Remote clock offset: -3.762 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:52 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 109.158 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 109.158 ms
Loss rate: 0.12%
```

Run 3: Report of SCReAM — Data Link

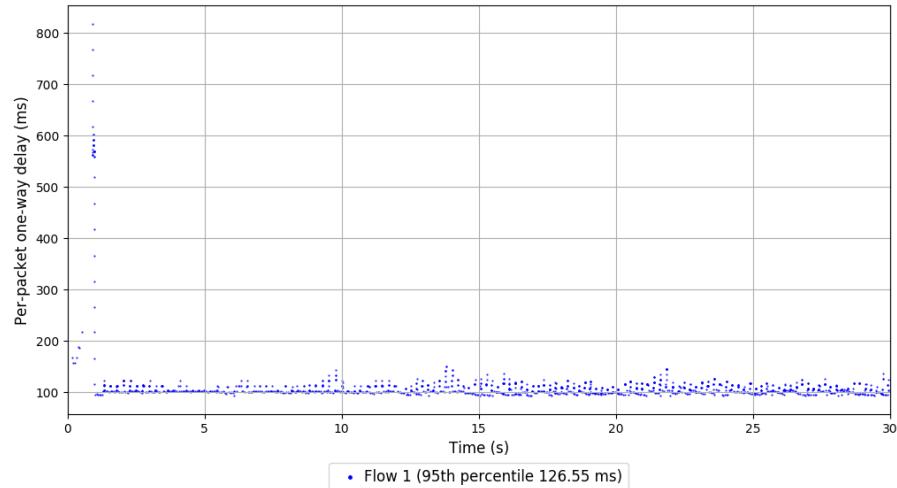
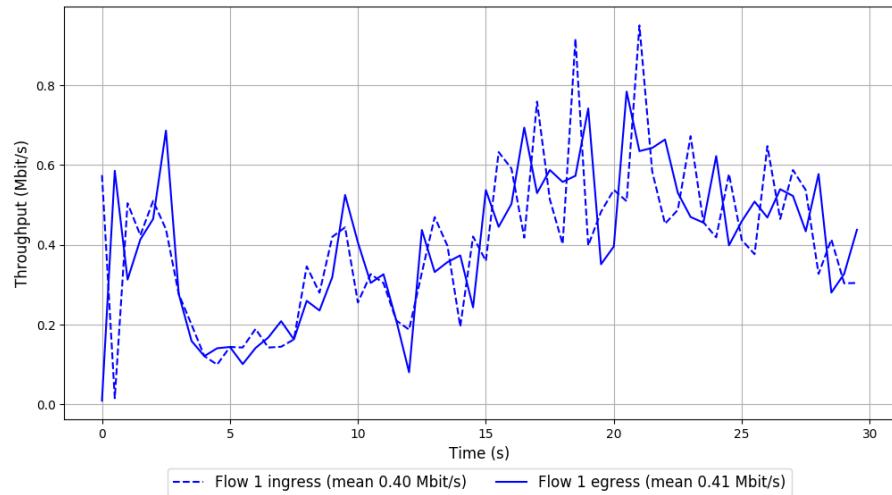


Run 1: Statistics of Sprout

```
Start at: Thu, 13 Jul 2017 20:21:23 +0000
End at: Thu, 13 Jul 2017 20:21:53 +0000
Local clock offset: 0.816 ms
Remote clock offset: -5.562 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:53 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 126.547 ms
Loss rate: -0.03%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 126.547 ms
Loss rate: -0.03%
```

Run 1: Report of Sprout — Data Link

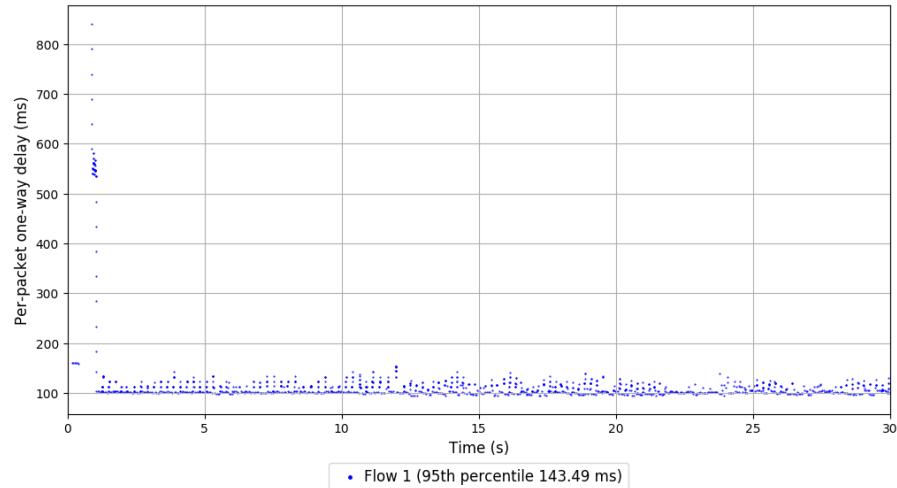
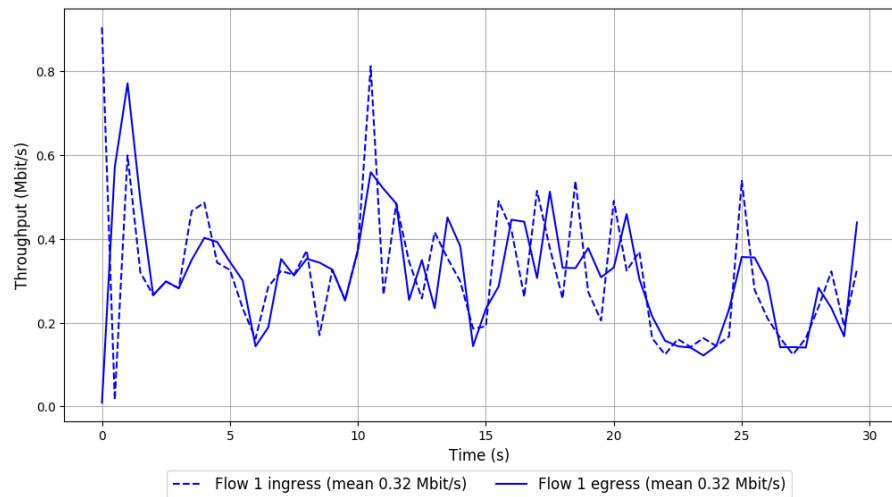


Run 2: Statistics of Sprout

```
Start at: Thu, 13 Jul 2017 20:38:06 +0000
End at: Thu, 13 Jul 2017 20:38:36 +0000
Local clock offset: 0.851 ms
Remote clock offset: -4.366 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:53 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 143.491 ms
Loss rate: -0.03%
-- Flow 1:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 143.491 ms
Loss rate: -0.03%
```

Run 2: Report of Sprout — Data Link

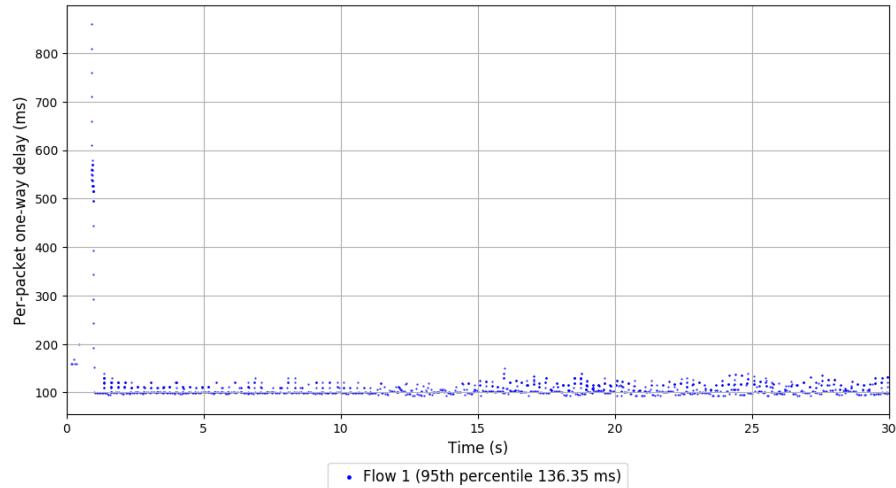
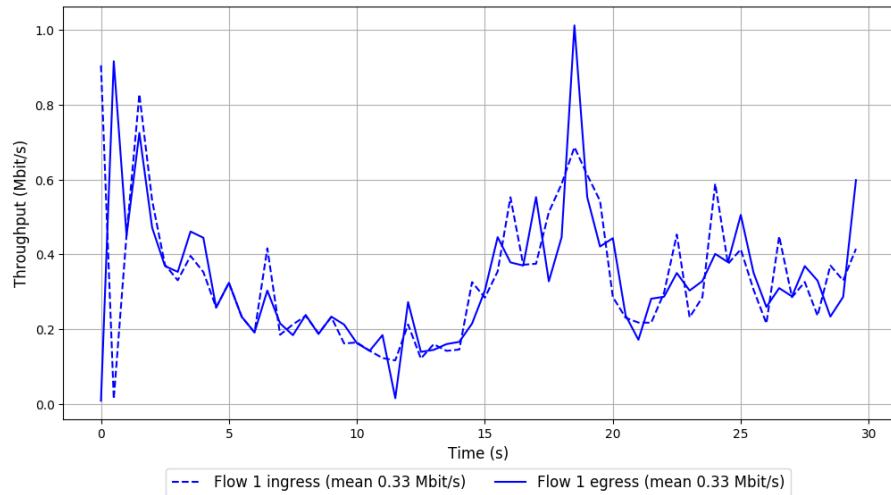


Run 3: Statistics of Sprout

```
Start at: Thu, 13 Jul 2017 20:54:49 +0000
End at: Thu, 13 Jul 2017 20:55:19 +0000
Local clock offset: 0.843 ms
Remote clock offset: -3.715 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:54 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 136.353 ms
Loss rate: -0.04%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 136.353 ms
Loss rate: -0.04%
```

Run 3: Report of Sprout — Data Link

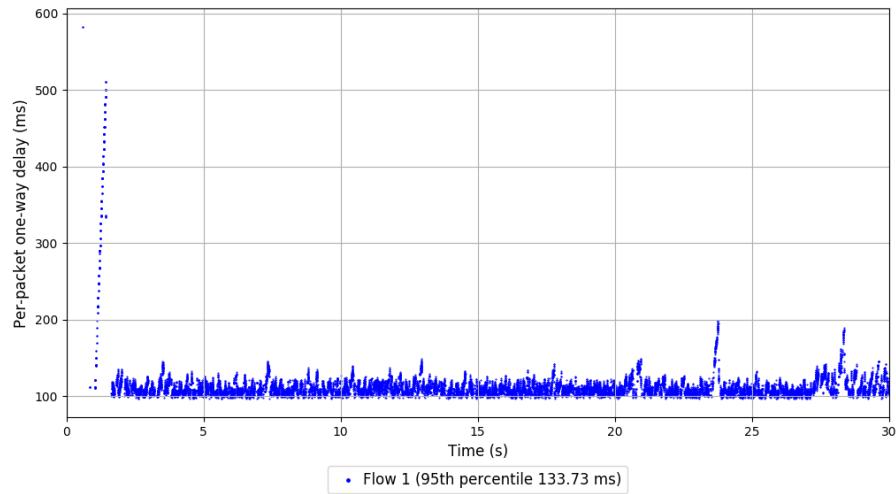
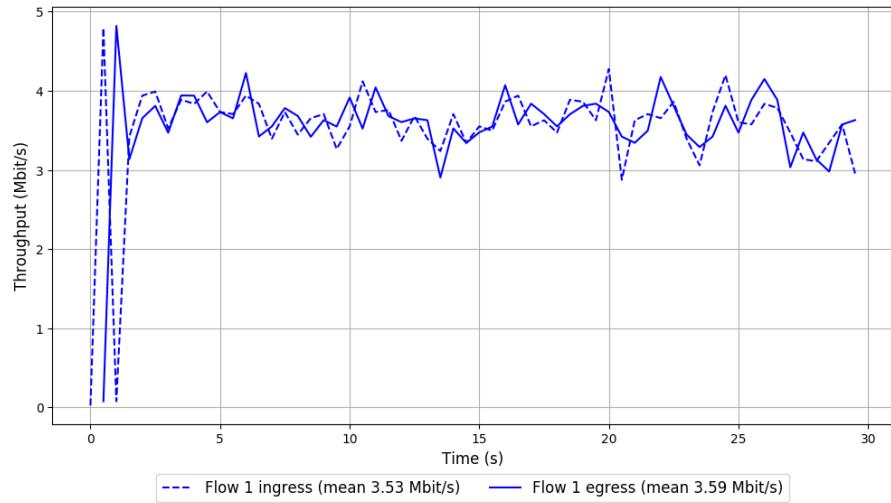


Run 1: Statistics of TaoVA-100x

```
Start at: Thu, 13 Jul 2017 20:13:35 +0000
End at: Thu, 13 Jul 2017 20:14:05 +0000
Local clock offset: 0.739 ms
Remote clock offset: -5.554 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:55 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 133.727 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 133.727 ms
Loss rate: 0.12%
```

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

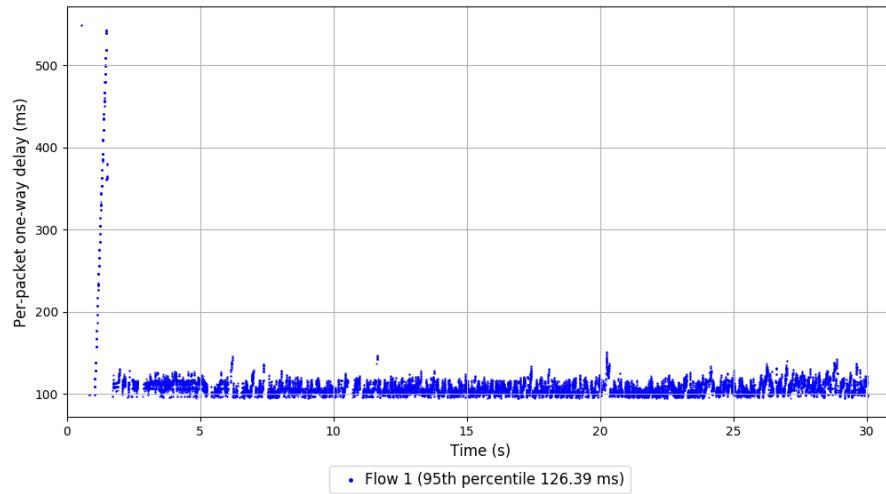
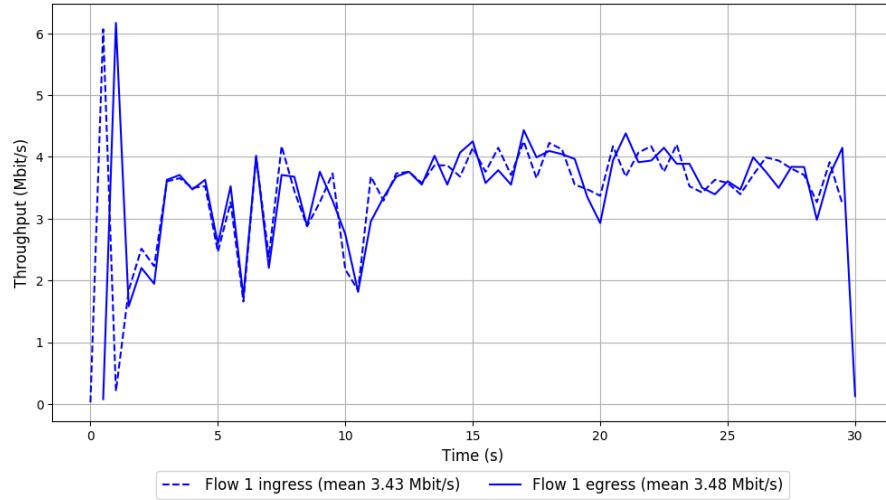


Run 2: Statistics of TaoVA-100x

```
Start at: Thu, 13 Jul 2017 20:30:18 +0000
End at: Thu, 13 Jul 2017 20:30:48 +0000
Local clock offset: 0.79 ms
Remote clock offset: -5.287 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:56 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 126.388 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 126.388 ms
Loss rate: 0.13%
```

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

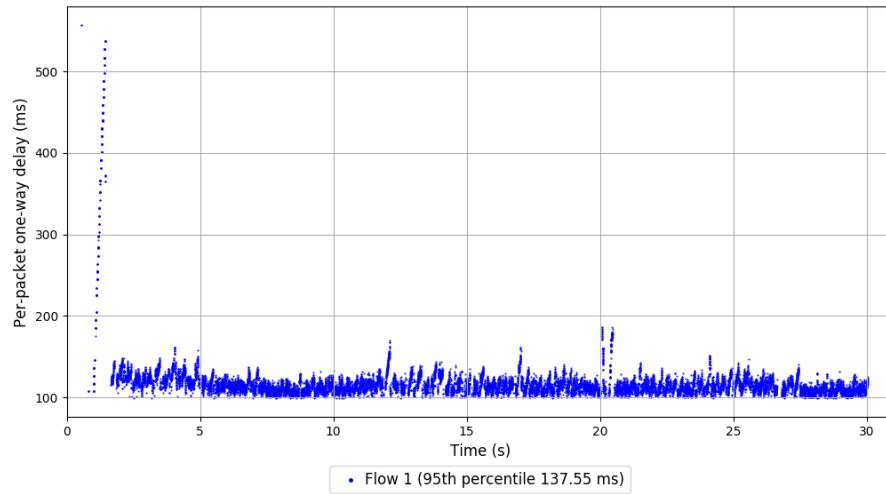
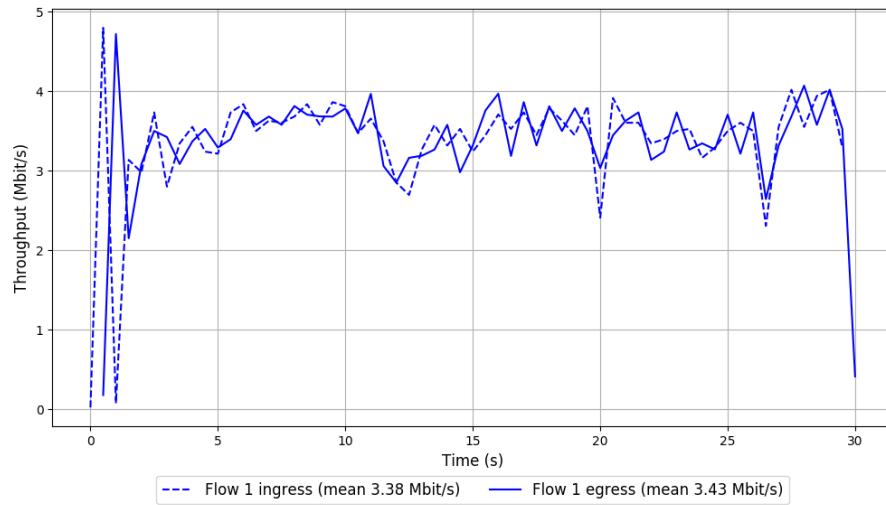


Run 3: Statistics of TaoVA-100x

```
Start at: Thu, 13 Jul 2017 20:47:01 +0000
End at: Thu, 13 Jul 2017 20:47:31 +0000
Local clock offset: 0.844 ms
Remote clock offset: -4.377 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:57 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.43 Mbit/s
95th percentile per-packet one-way delay: 137.550 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 3.43 Mbit/s
95th percentile per-packet one-way delay: 137.550 ms
Loss rate: 0.13%
```

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

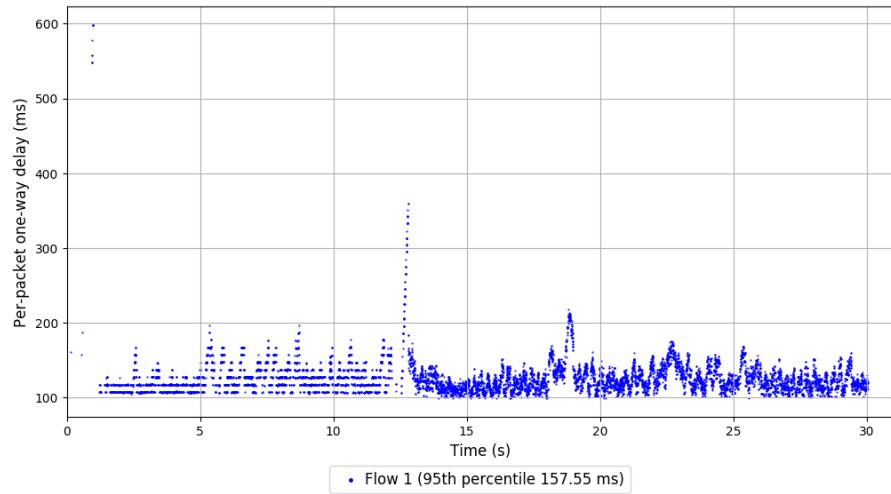
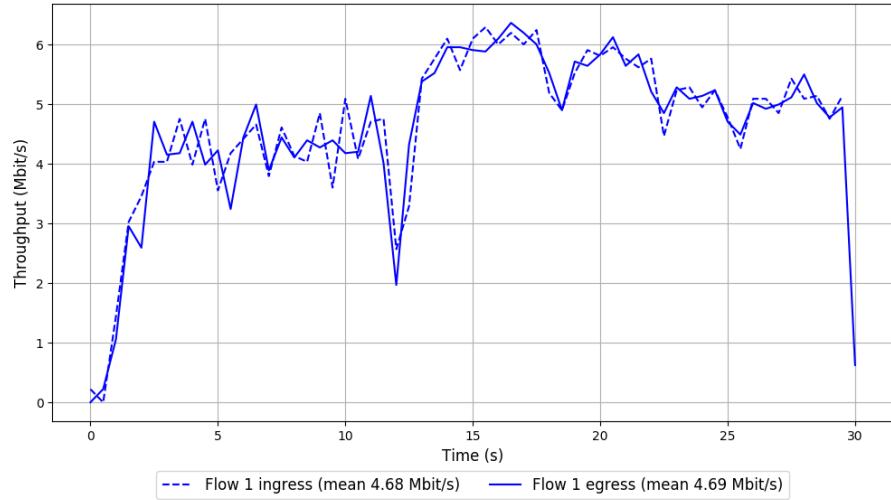


Run 1: Statistics of TCP Vegas

```
Start at: Thu, 13 Jul 2017 20:24:44 +0000
End at: Thu, 13 Jul 2017 20:25:14 +0000
Local clock offset: 0.85 ms
Remote clock offset: -5.303 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:57 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.69 Mbit/s
95th percentile per-packet one-way delay: 157.548 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 4.69 Mbit/s
95th percentile per-packet one-way delay: 157.548 ms
Loss rate: 0.26%
```

Run 1: Report of TCP Vegas — Data Link

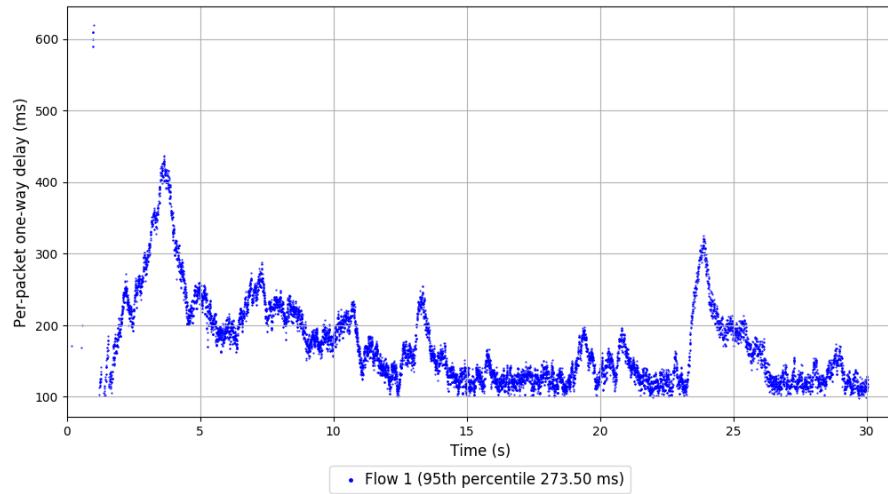
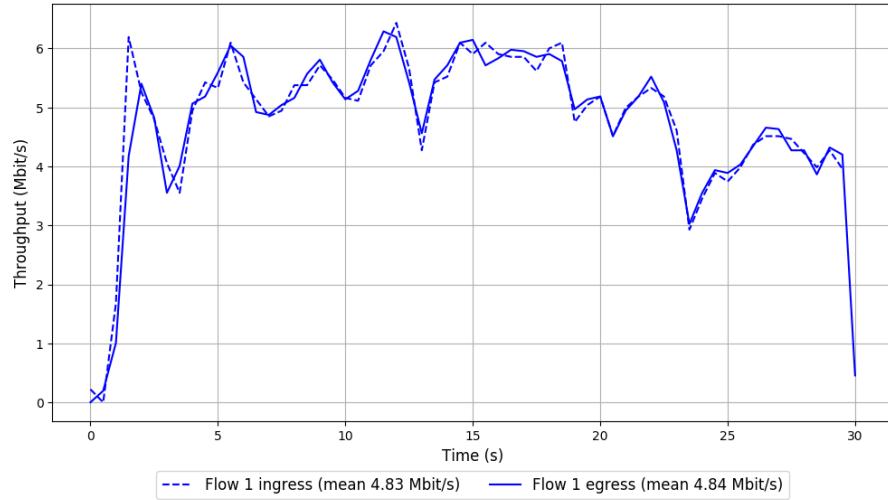


Run 2: Statistics of TCP Vegas

```
Start at: Thu, 13 Jul 2017 20:41:26 +0000
End at: Thu, 13 Jul 2017 20:41:56 +0000
Local clock offset: 0.804 ms
Remote clock offset: -3.9 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:59 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.84 Mbit/s
95th percentile per-packet one-way delay: 273.502 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 4.84 Mbit/s
95th percentile per-packet one-way delay: 273.502 ms
Loss rate: 0.17%
```

Run 2: Report of TCP Vegas — Data Link

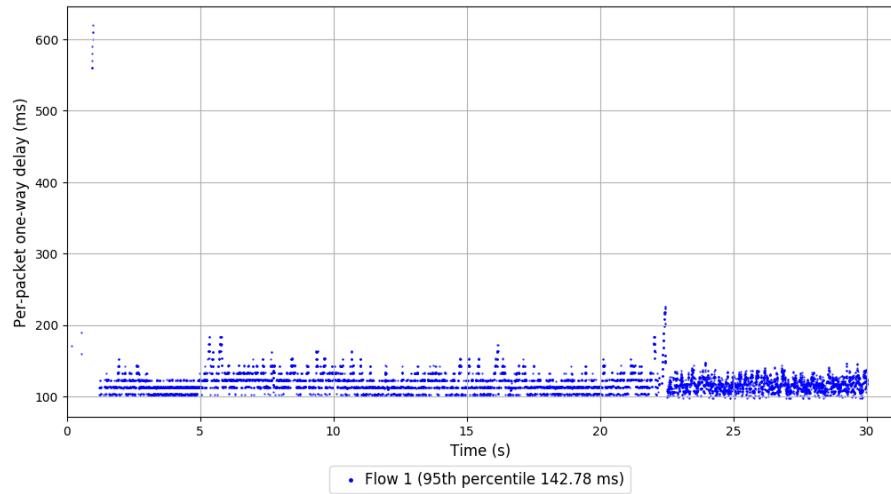
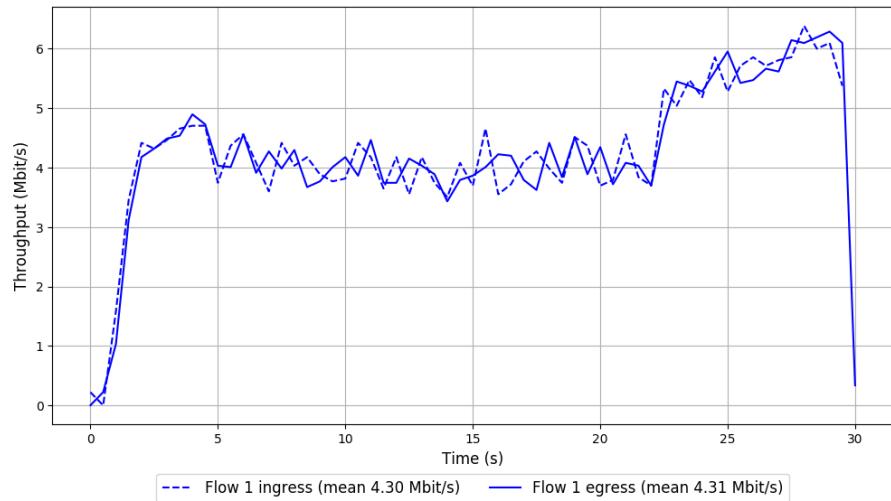


Run 3: Statistics of TCP Vegas

```
Start at: Thu, 13 Jul 2017 20:58:11 +0000
End at: Thu, 13 Jul 2017 20:58:41 +0000
Local clock offset: 0.883 ms
Remote clock offset: -3.212 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:51:59 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 142.781 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 142.781 ms
Loss rate: 0.12%
```

Run 3: Report of TCP Vegas — Data Link

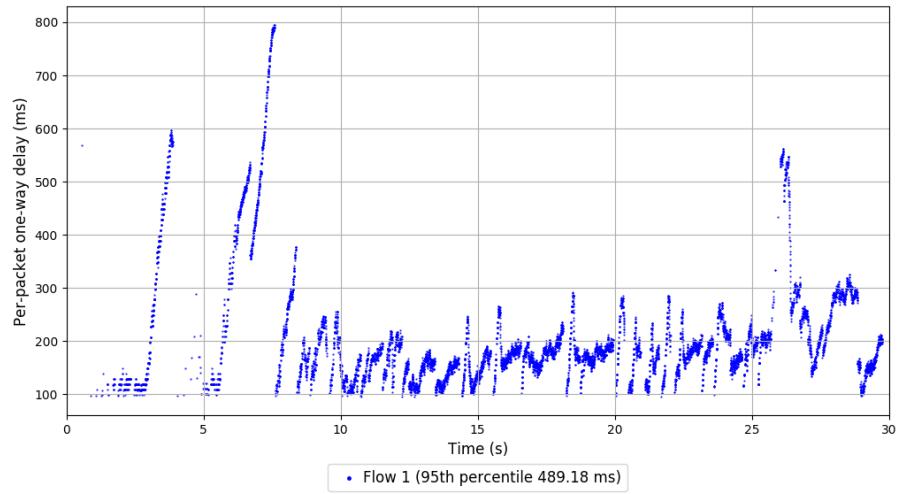
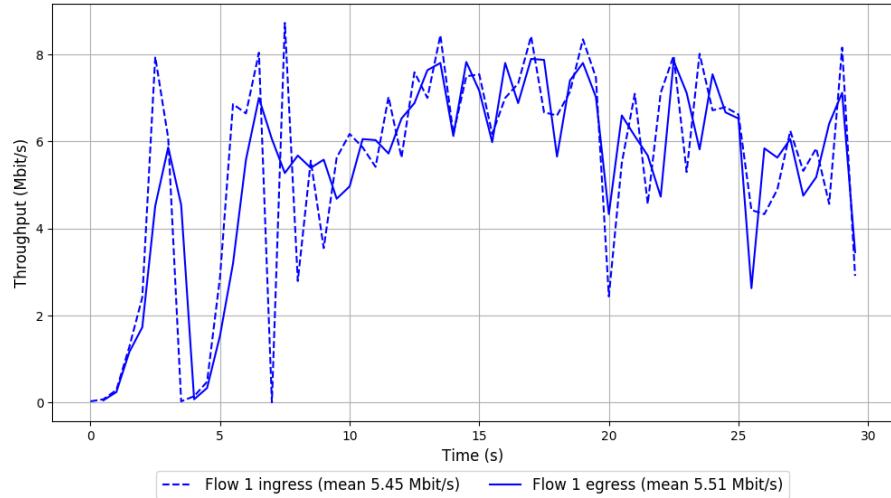


Run 1: Statistics of Verus

```
Start at: Thu, 13 Jul 2017 20:23:37 +0000
End at: Thu, 13 Jul 2017 20:24:07 +0000
Local clock offset: 0.817 ms
Remote clock offset: -5.398 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:01 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.51 Mbit/s
95th percentile per-packet one-way delay: 489.183 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 5.51 Mbit/s
95th percentile per-packet one-way delay: 489.183 ms
Loss rate: 0.66%
```

Run 1: Report of Verus — Data Link

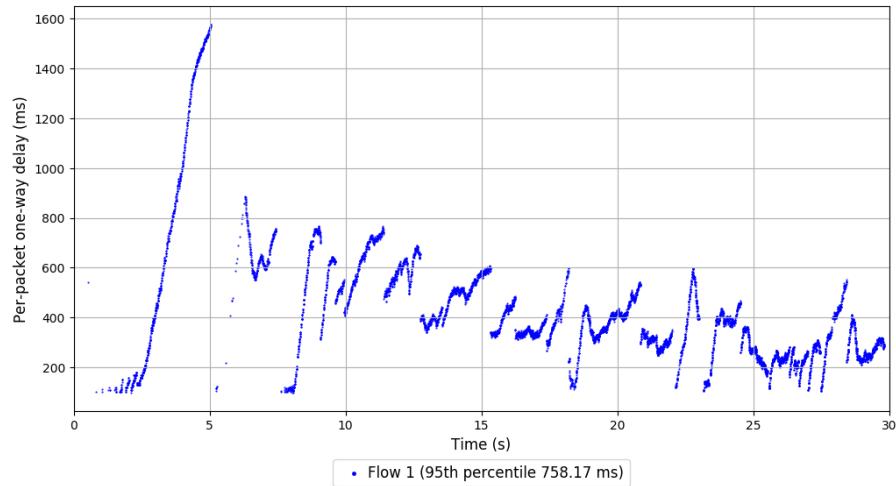
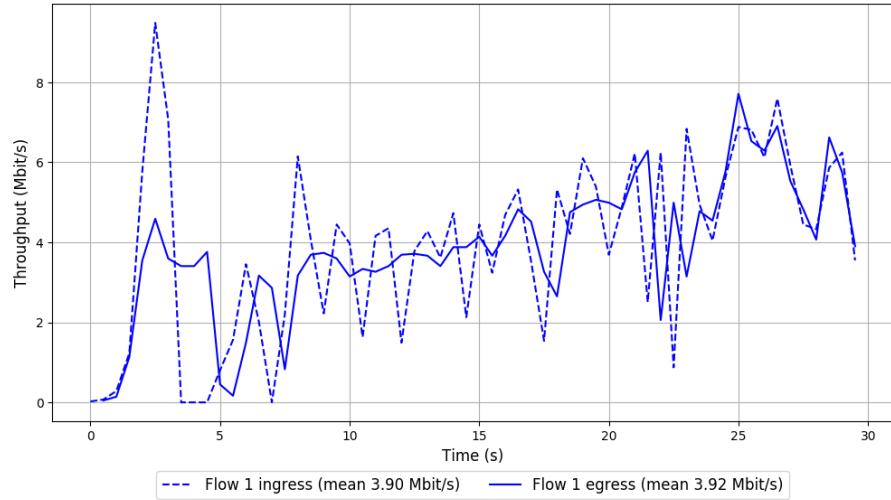


Run 2: Statistics of Verus

```
Start at: Thu, 13 Jul 2017 20:40:19 +0000
End at: Thu, 13 Jul 2017 20:40:49 +0000
Local clock offset: 0.847 ms
Remote clock offset: -4.227 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:01 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 758.168 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 758.168 ms
Loss rate: 1.29%
```

Run 2: Report of Verus — Data Link

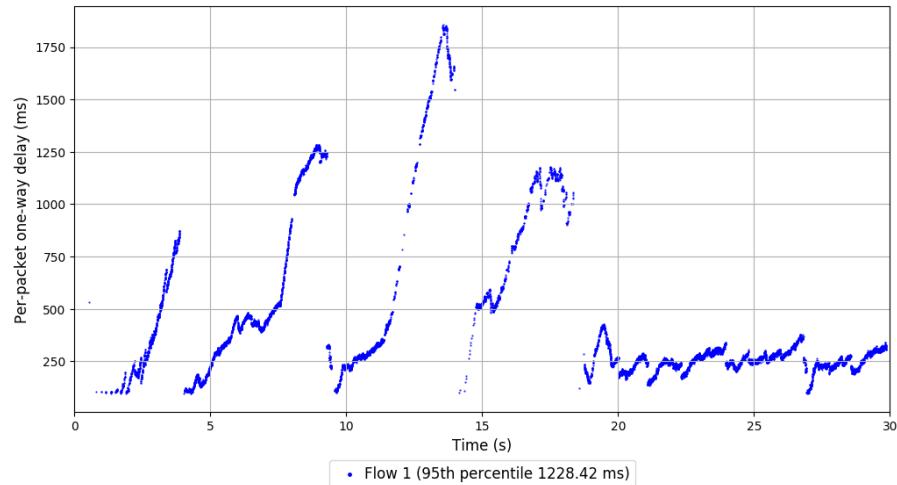
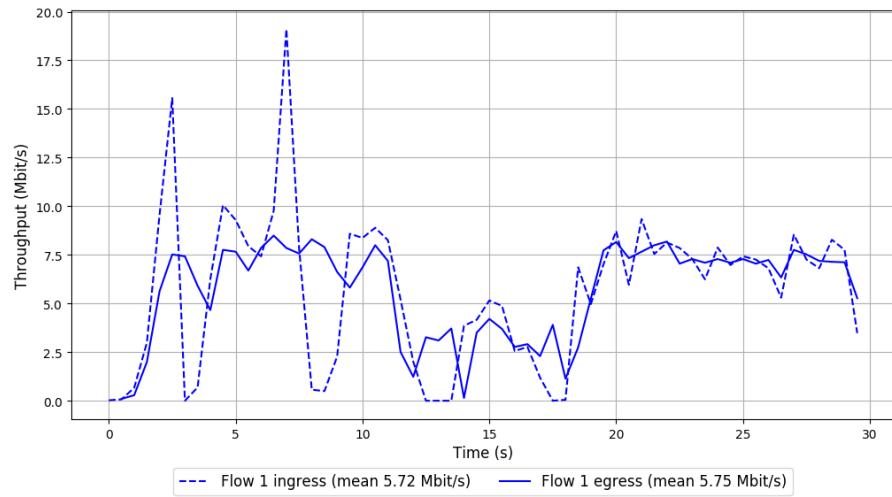


Run 3: Statistics of Verus

```
Start at: Thu, 13 Jul 2017 20:57:03 +0000
End at: Thu, 13 Jul 2017 20:57:33 +0000
Local clock offset: 0.873 ms
Remote clock offset: -3.252 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:02 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.75 Mbit/s
95th percentile per-packet one-way delay: 1228.418 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 5.75 Mbit/s
95th percentile per-packet one-way delay: 1228.418 ms
Loss rate: 0.88%
```

Run 3: Report of Verus — Data Link

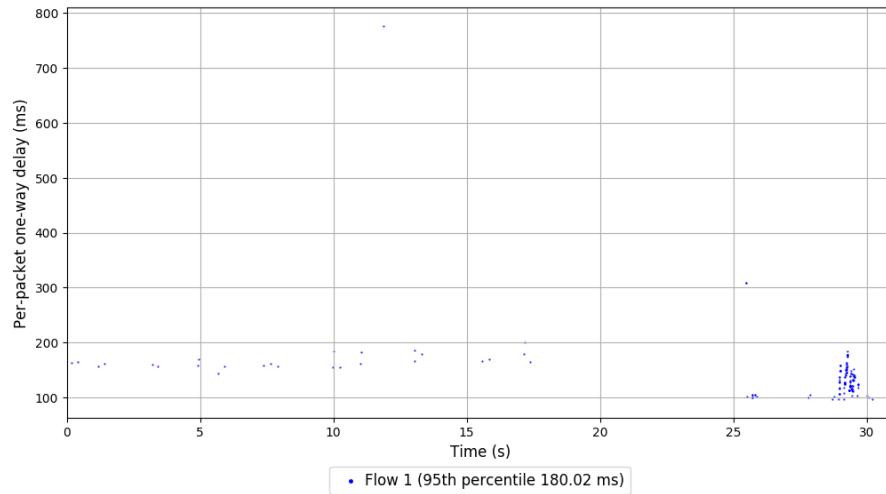
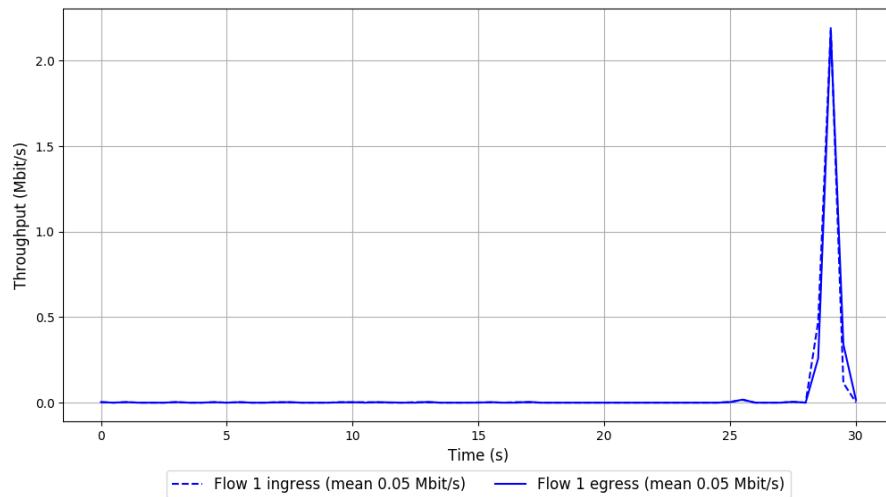


```
Run 1: Statistics of WebRTC media

Start at: Thu, 13 Jul 2017 20:25:51 +0000
End at: Thu, 13 Jul 2017 20:26:21 +0000
Local clock offset: 0.835 ms
Remote clock offset: -5.293 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:02 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 180.019 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 180.019 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

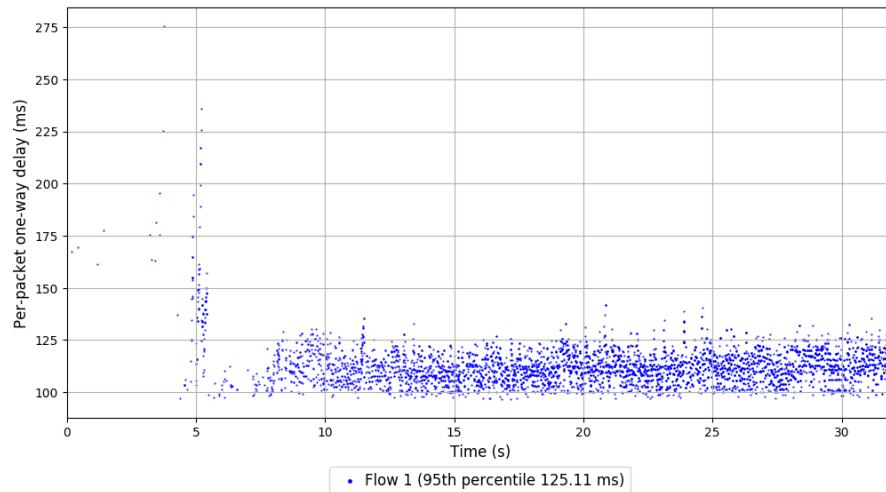
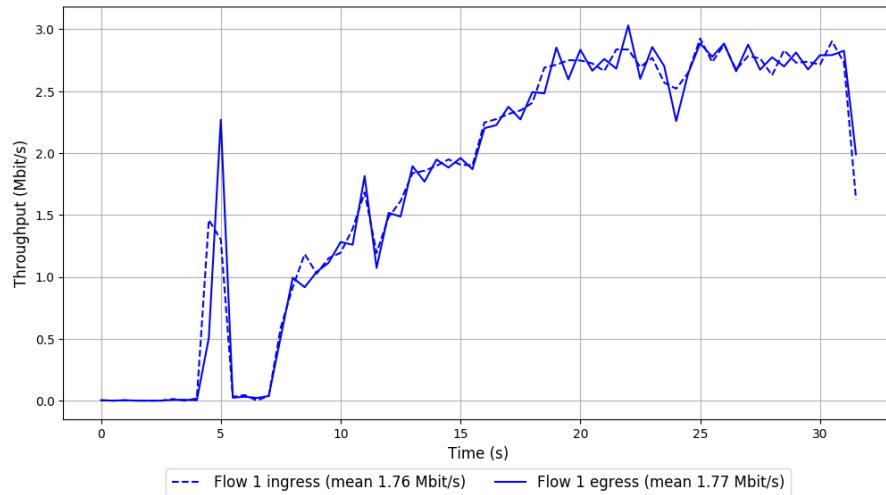


Run 2: Statistics of WebRTC media

```
Start at: Thu, 13 Jul 2017 20:42:33 +0000
End at: Thu, 13 Jul 2017 20:43:03 +0000
Local clock offset: 0.87 ms
Remote clock offset: -3.94 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:03 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 125.106 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 125.106 ms
Loss rate: 0.18%
```

Run 2: Report of WebRTC media — Data Link



```
Run 3: Statistics of WebRTC media

Start at: Thu, 13 Jul 2017 20:59:18 +0000
End at: Thu, 13 Jul 2017 20:59:48 +0000
Local clock offset: 0.879 ms
Remote clock offset: -2.806 ms

# Below is generated by plot.py at Thu, 13 Jul 2017 21:52:03 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 284.218 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 284.218 ms
Loss rate: 0.17%
```

Run 3: Report of WebRTC media — Data Link

