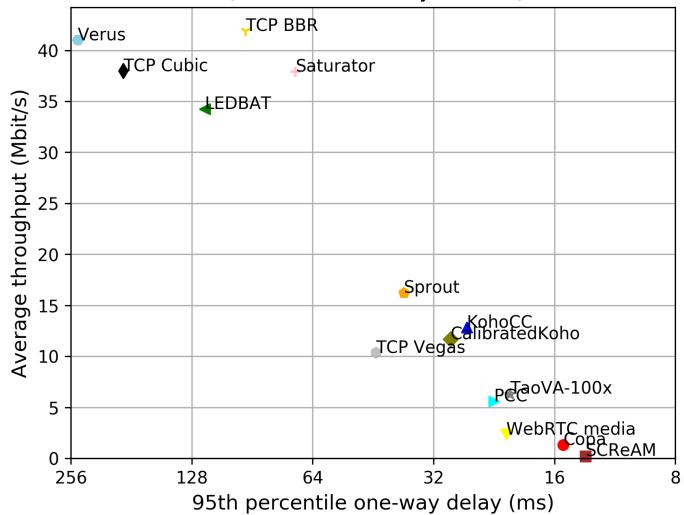


Pantheon Summary (Generated at Tue, 25 Jul 2017 08:33:08 +0000 with pantheon version 266b116f0817a07d000b4d181ce187fd27d3e654)

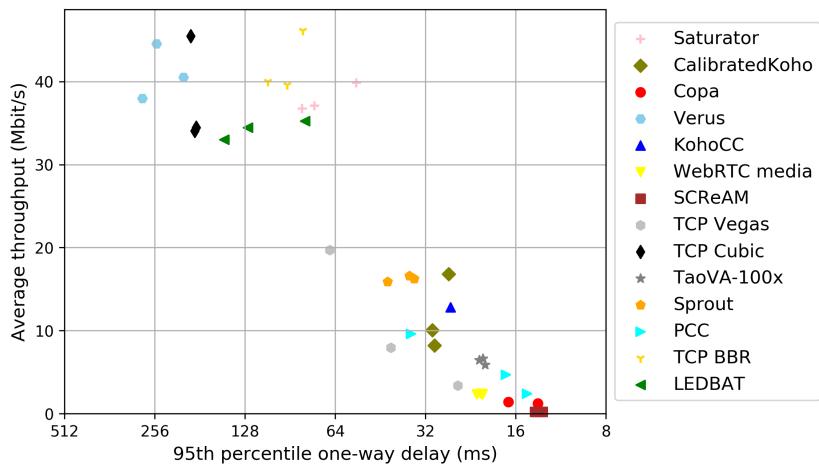
Repeated the test of 15 congestion control schemes 3 times.
Each test lasted for 30 seconds running 1 flow.
Data path: AWS California 1 Ethernet (*local*) →Stanford ppp0 (*remote*).
NTP offset measured against time.stanford.edu and has been applied to correct the timestamps in logs.

```
git branch: master @ 266b116f0817a07d000b4d181ce187fd27d3e654
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
M datagrump/sender.cc
third_party/genericCC @ dae96123232f1bcb37725348fa2378691ce26725
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179aab4a906ce6bb7cf3cf
third_party/pantheon-stimuli @ fc73a85ca16c34366d1888dc8a0d0d88d4ebf2a7
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
M scripts/merge-tunnel-logs
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 California 1 Ethernet to Stanford ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



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



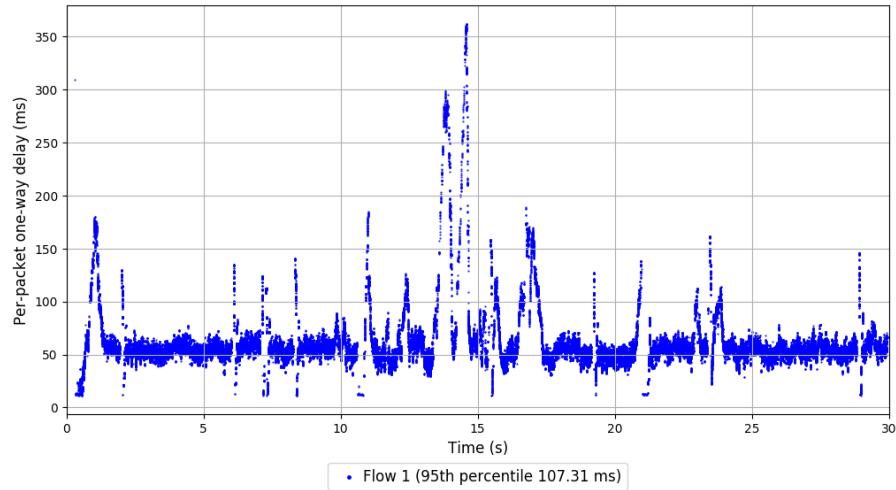
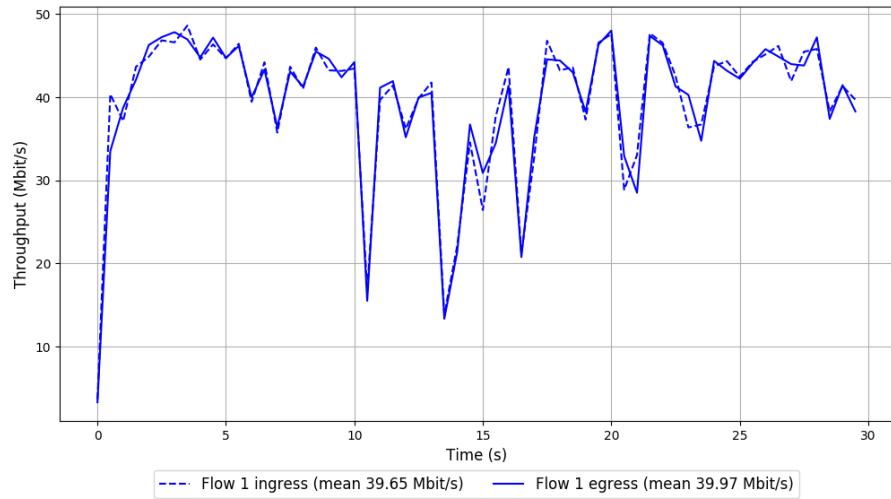
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	41.89	94.03	0.16
CalibratedKoho	3	11.70	29.02	0.03
Copa	3	1.32	15.22	0.00
TCP Cubic	3	37.99	189.69	0.49
KohoCC	3	12.83	26.42	0.00
LEDBAT	3	34.24	118.77	0.19
PCC	3	5.59	22.61	0.00
QUIC Cubic	3	nan	nan	nan
Saturator	3	37.89	70.69	0.05
SCReAM	3	0.22	13.40	0.00
Sprout	3	16.25	37.98	0.01
TaoVA-100x	3	6.32	20.67	0.00
TCP Vegas	3	10.35	44.54	0.00
Verus	3	41.00	246.50	0.83
WebRTC media	3	2.37	21.07	0.00

Run 1: Statistics of TCP BBR

```
Start at: Tue, 25 Jul 2017 06:58:57 +0000
End at: Tue, 25 Jul 2017 06:59:27 +0000
Local clock offset: 1.106 ms
Remote clock offset: -3.062 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:31:57 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 107.312 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 107.312 ms
Loss rate: 0.27%
```

Run 1: Report of TCP BBR — Data Link

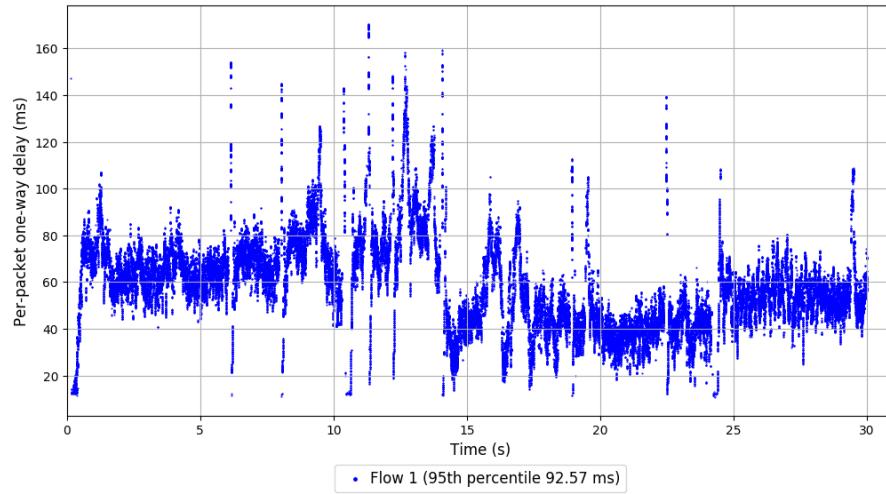
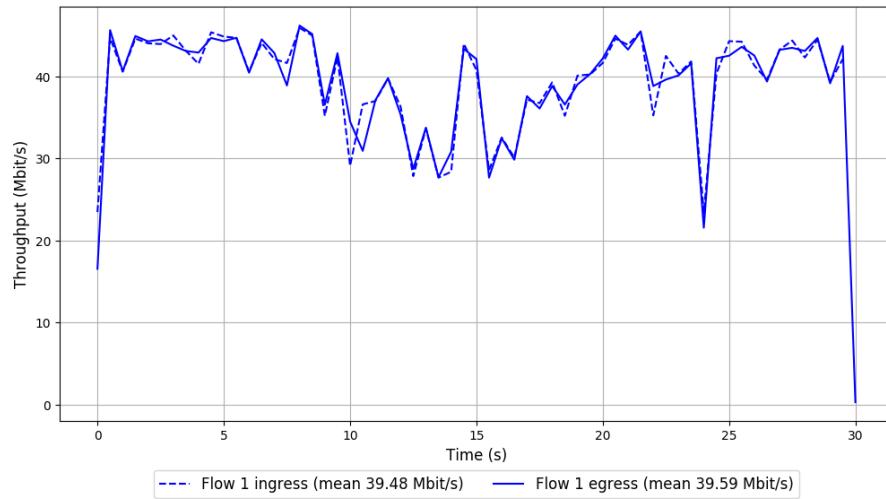


Run 2: Statistics of TCP BBR

```
Start at: Tue, 25 Jul 2017 07:16:45 +0000
End at: Tue, 25 Jul 2017 07:17:15 +0000
Local clock offset: 1.104 ms
Remote clock offset: -2.884 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:31:58 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.59 Mbit/s
95th percentile per-packet one-way delay: 92.570 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 39.59 Mbit/s
95th percentile per-packet one-way delay: 92.570 ms
Loss rate: 0.12%
```

Run 2: Report of TCP BBR — Data Link

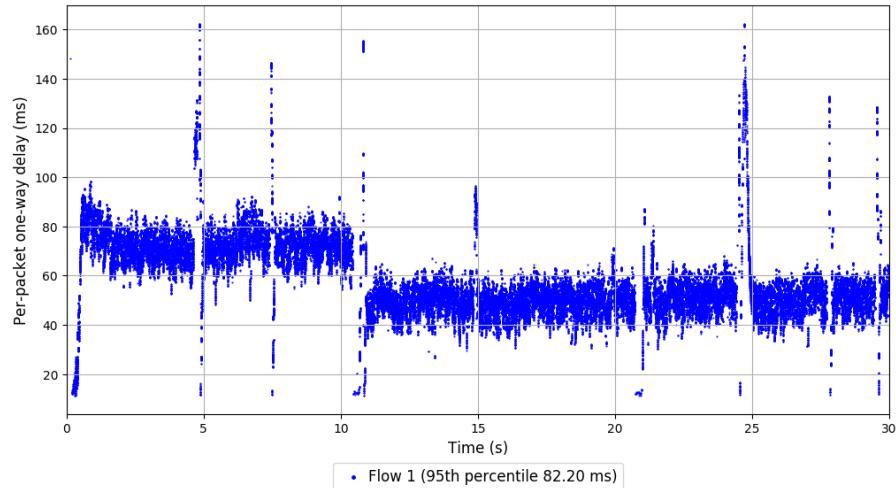
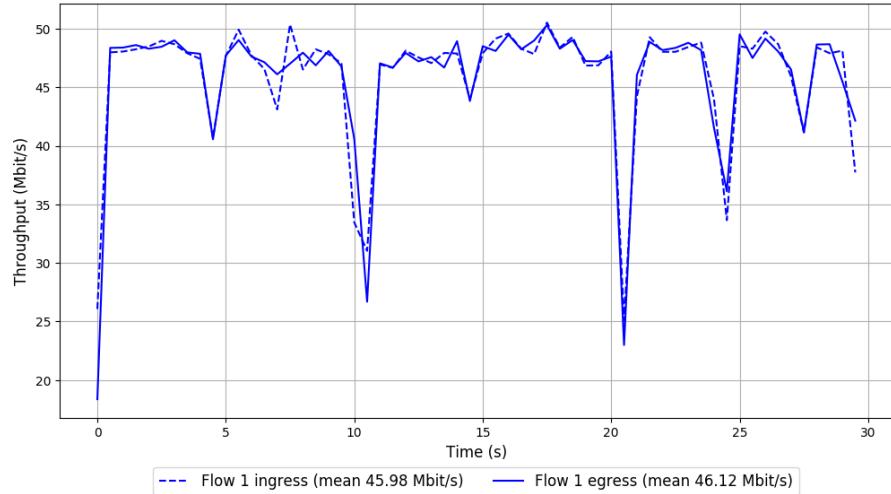


Run 3: Statistics of TCP BBR

```
Start at: Tue, 25 Jul 2017 07:34:34 +0000
End at: Tue, 25 Jul 2017 07:35:04 +0000
Local clock offset: 1.174 ms
Remote clock offset: -2.958 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:04 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.12 Mbit/s
95th percentile per-packet one-way delay: 82.200 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 46.12 Mbit/s
95th percentile per-packet one-way delay: 82.200 ms
Loss rate: 0.09%
```

Run 3: Report of TCP BBR — Data Link

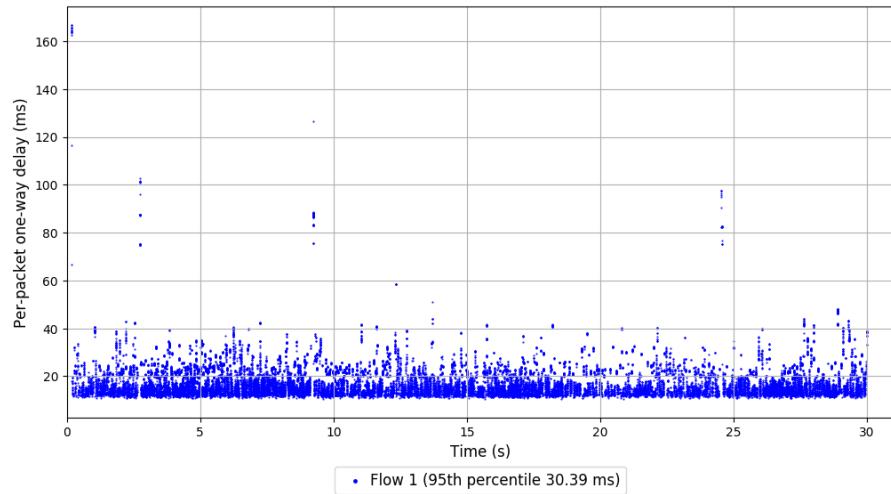
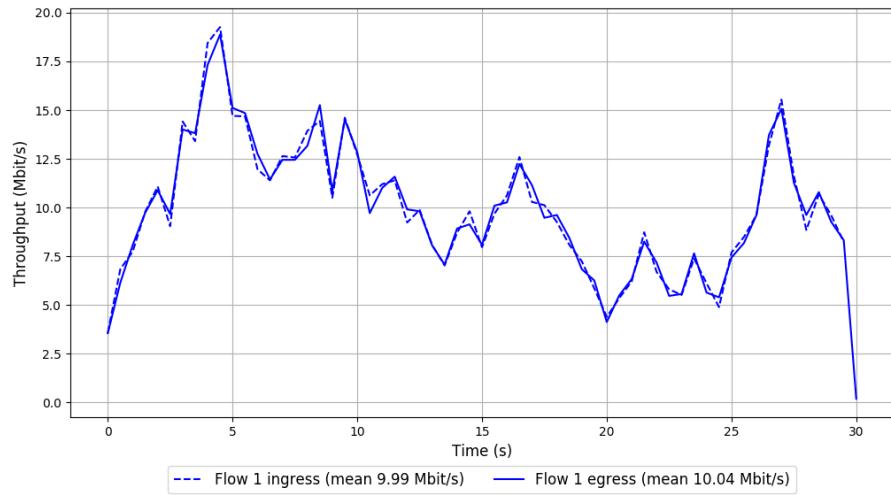


```
Run 1: Statistics of CalibratedKoho
```

```
Start at: Tue, 25 Jul 2017 06:57:46 +0000
End at: Tue, 25 Jul 2017 06:58:16 +0000
Local clock offset: 1.087 ms
Remote clock offset: -3.106 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:04 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 10.04 Mbit/s
95th percentile per-packet one-way delay: 30.393 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 10.04 Mbit/s
95th percentile per-packet one-way delay: 30.393 ms
Loss rate: 0.01%
```

Run 1: Report of CalibratedKoho — Data Link

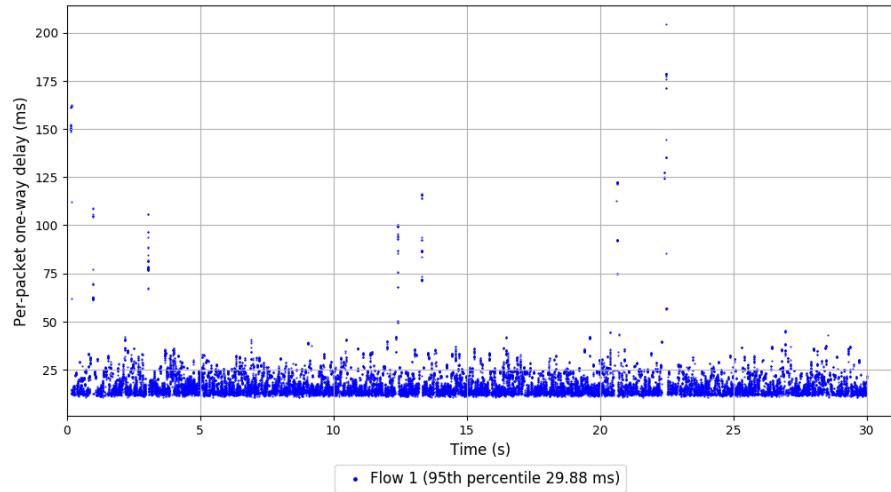
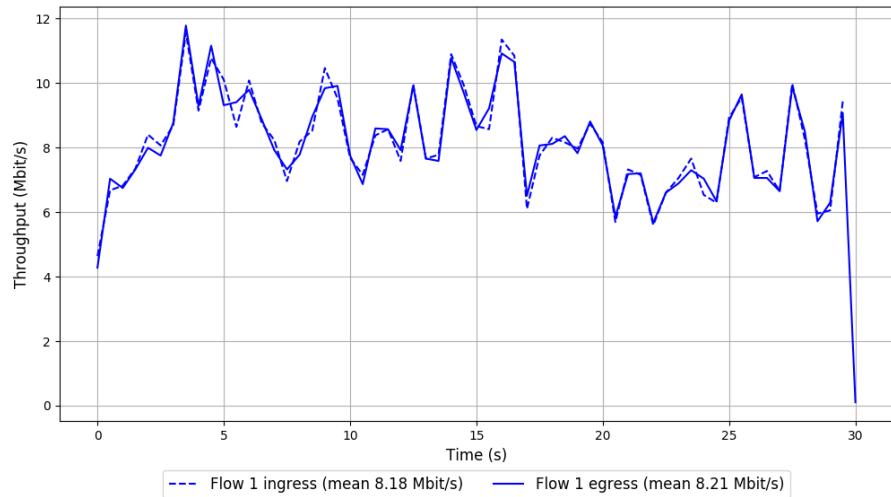


Run 2: Statistics of CalibratedKoho

```
Start at: Tue, 25 Jul 2017 07:15:34 +0000
End at: Tue, 25 Jul 2017 07:16:05 +0000
Local clock offset: 1.03 ms
Remote clock offset: -2.857 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:04 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 29.878 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 29.878 ms
Loss rate: 0.07%
```

Run 2: Report of CalibratedKoho — Data Link



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

```
Start at: Tue, 25 Jul 2017 07:33:23 +0000
```

```
End at: Tue, 25 Jul 2017 07:33:53 +0000
```

```
Local clock offset: 1.171 ms
```

```
Remote clock offset: -2.94 ms
```

```
# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:05 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 16.84 Mbit/s
```

```
95th percentile per-packet one-way delay: 26.779 ms
```

```
Loss rate: 0.00%
```

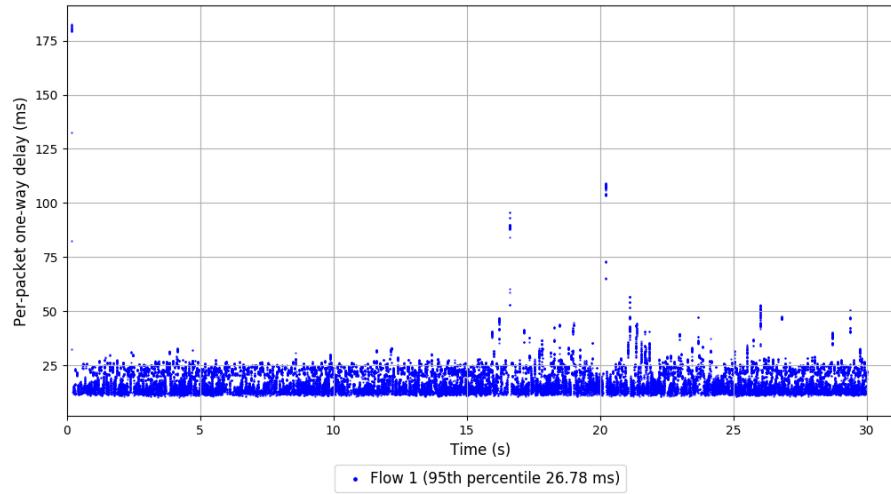
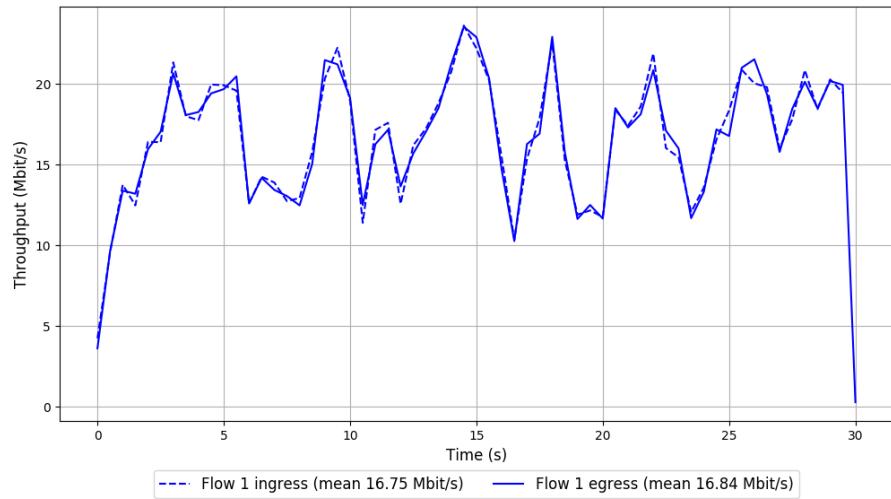
```
-- Flow 1:
```

```
Average throughput: 16.84 Mbit/s
```

```
95th percentile per-packet one-way delay: 26.779 ms
```

```
Loss rate: 0.00%
```

Run 3: Report of CalibratedKoho — Data Link

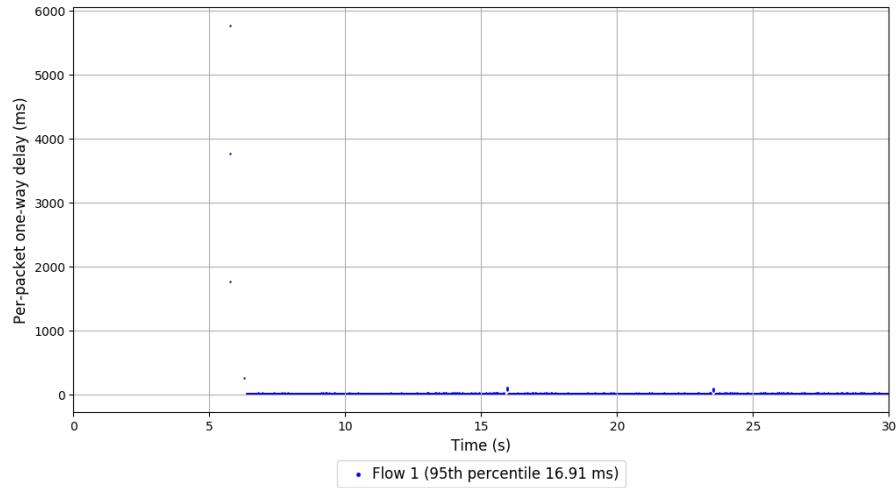
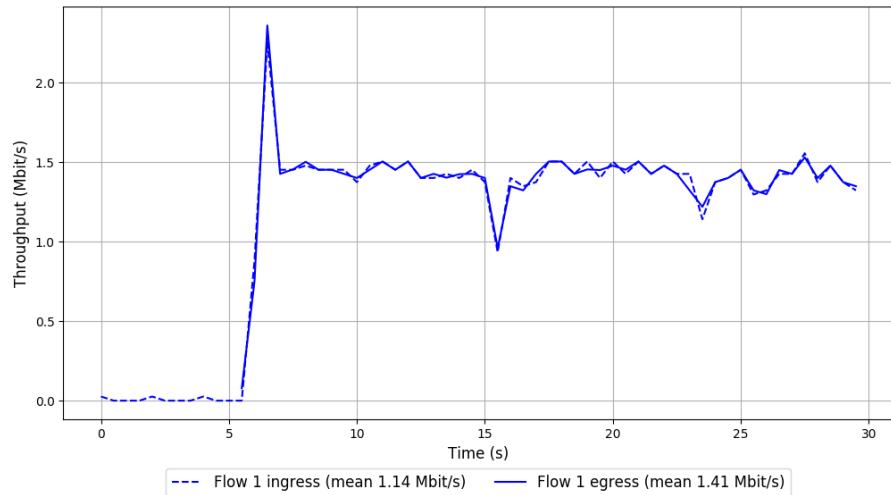


Run 1: Statistics of Copa

```
Start at: Tue, 25 Jul 2017 06:49:30 +0000
End at: Tue, 25 Jul 2017 06:50:00 +0000
Local clock offset: 1.022 ms
Remote clock offset: -3.162 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:05 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 16.915 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 16.915 ms
Loss rate: 0.00%
```

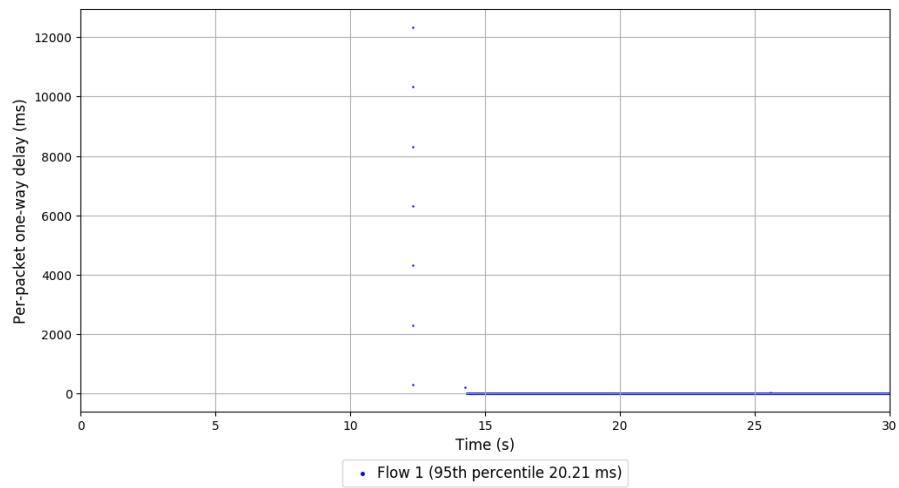
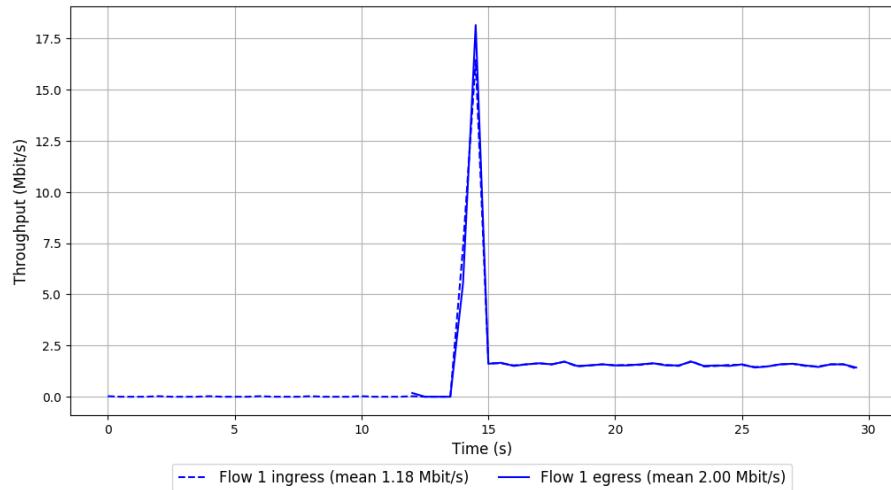
Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

```
Start at: Tue, 25 Jul 2017 07:07:17 +0000
End at: Tue, 25 Jul 2017 07:07:47 +0000
Local clock offset: 1.11 ms
Remote clock offset: -3.043 ms
```

Run 2: Report of Copa — Data Link

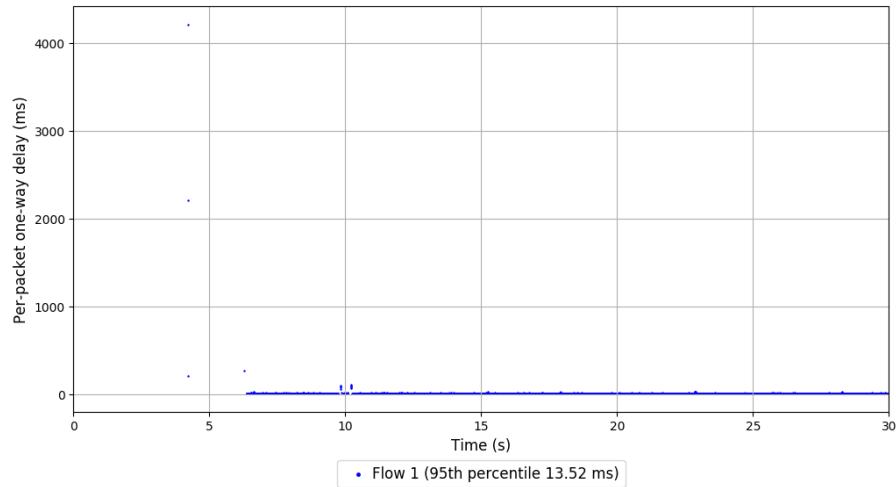
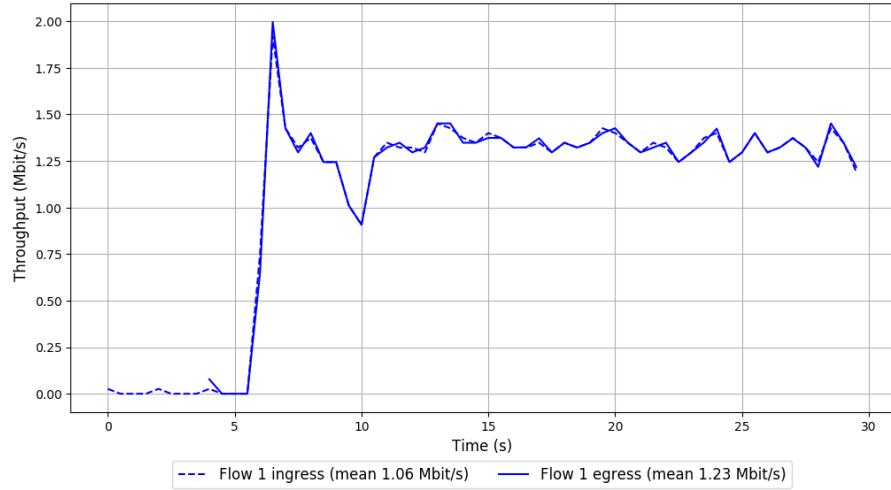


Run 3: Statistics of Copa

```
Start at: Tue, 25 Jul 2017 07:25:05 +0000
End at: Tue, 25 Jul 2017 07:25:35 +0000
Local clock offset: 1.055 ms
Remote clock offset: -2.849 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:07 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 13.516 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 13.516 ms
Loss rate: 0.00%
```

Run 3: Report of Copa — Data Link

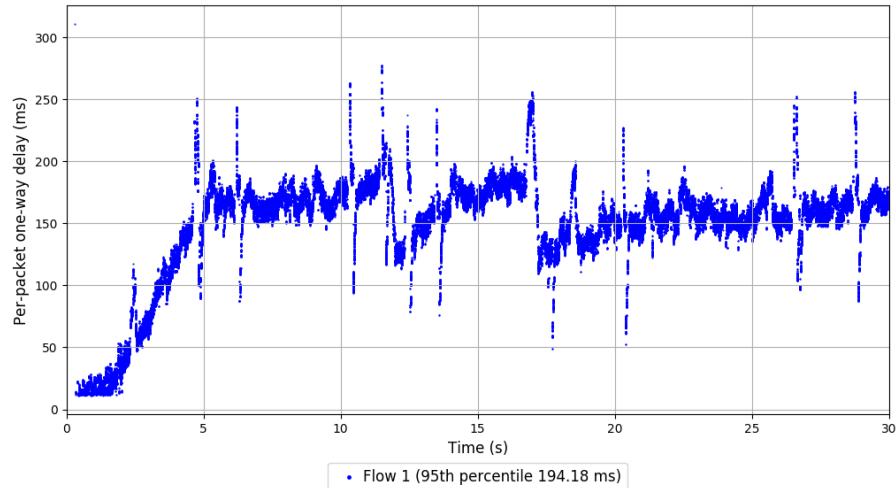
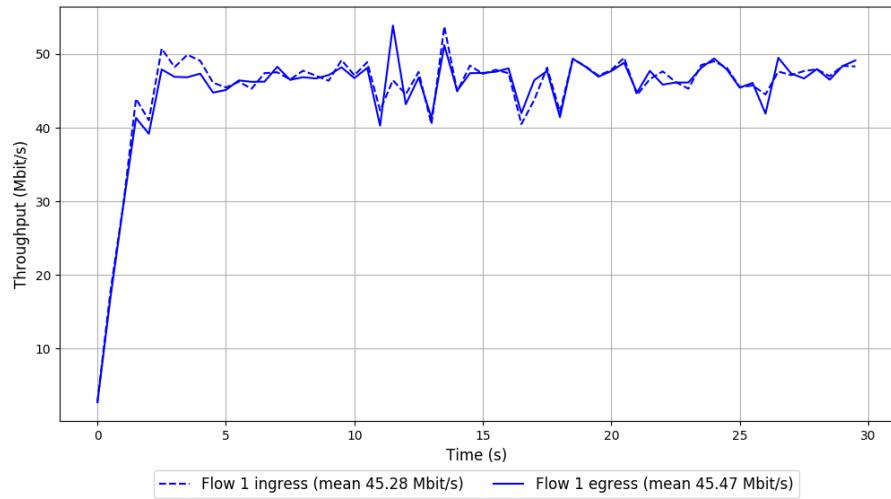


Run 1: Statistics of TCP Cubic

```
Start at: Tue, 25 Jul 2017 06:44:47 +0000
End at: Tue, 25 Jul 2017 06:45:17 +0000
Local clock offset: 0.89 ms
Remote clock offset: -3.333 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:13 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.47 Mbit/s
95th percentile per-packet one-way delay: 194.176 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 45.47 Mbit/s
95th percentile per-packet one-way delay: 194.176 ms
Loss rate: 0.58%
```

Run 1: Report of TCP Cubic — Data Link

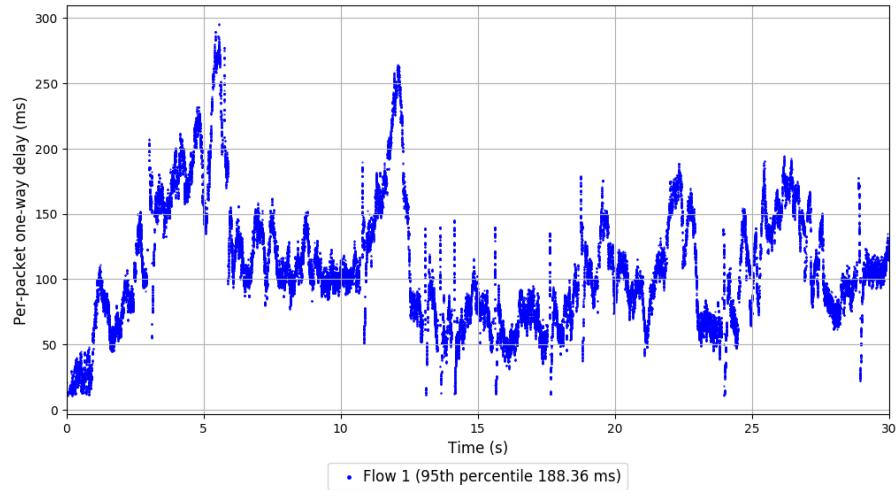
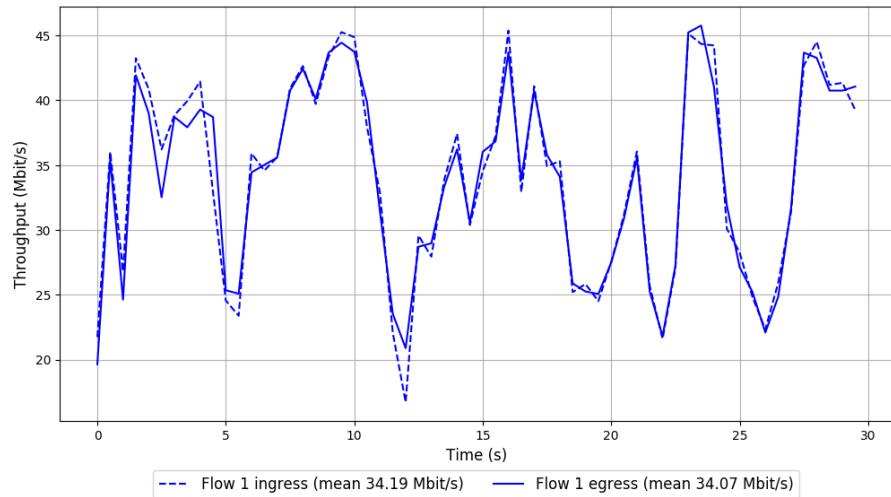


Run 2: Statistics of TCP Cubic

```
Start at: Tue, 25 Jul 2017 07:02:34 +0000
End at: Tue, 25 Jul 2017 07:03:04 +0000
Local clock offset: 0.99 ms
Remote clock offset: -3.119 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:13 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.07 Mbit/s
95th percentile per-packet one-way delay: 188.359 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 34.07 Mbit/s
95th percentile per-packet one-way delay: 188.359 ms
Loss rate: 0.37%
```

Run 2: Report of TCP Cubic — Data Link

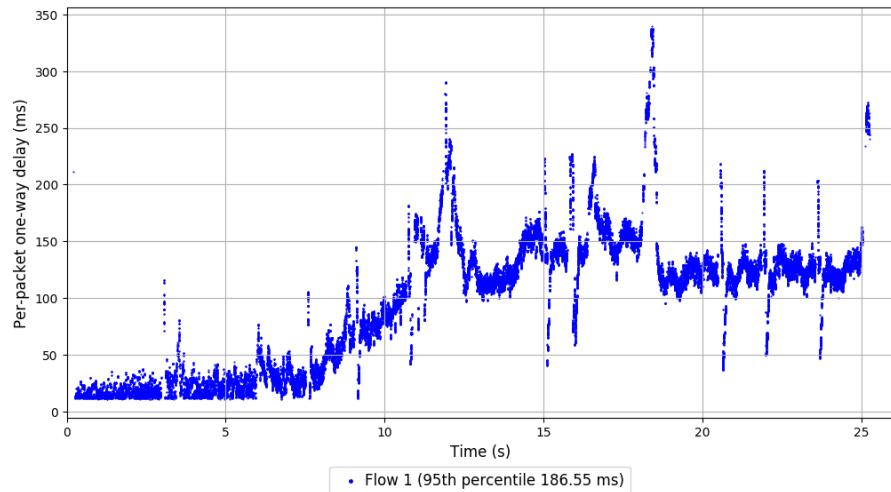
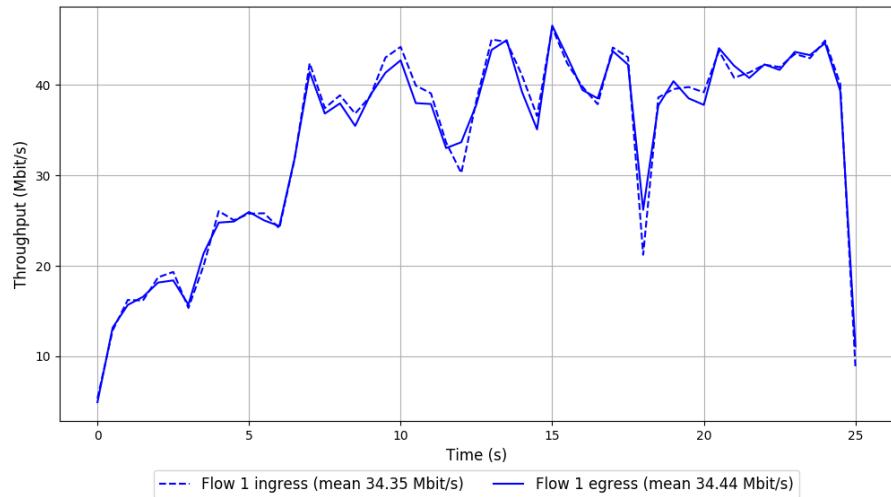


Run 3: Statistics of TCP Cubic

```
Start at: Tue, 25 Jul 2017 07:20:22 +0000
End at: Tue, 25 Jul 2017 07:20:52 +0000
Local clock offset: 1.109 ms
Remote clock offset: -2.891 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:17 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.44 Mbit/s
95th percentile per-packet one-way delay: 186.549 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 34.44 Mbit/s
95th percentile per-packet one-way delay: 186.549 ms
Loss rate: 0.51%
```

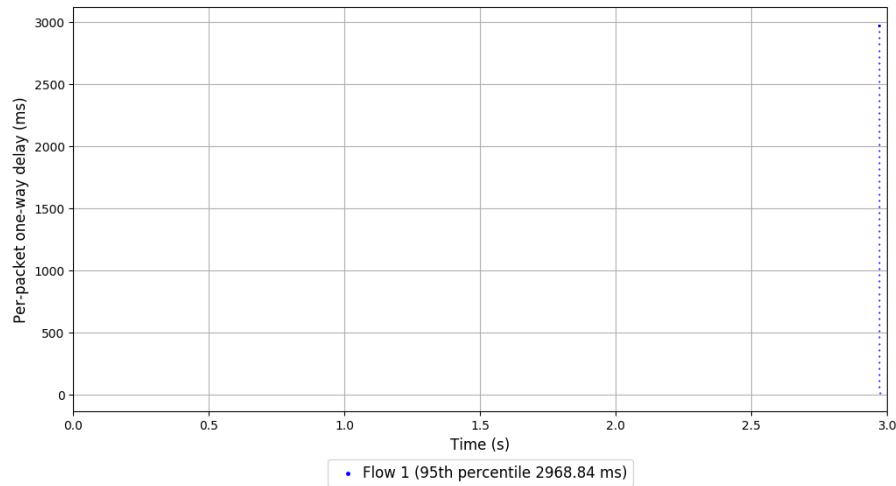
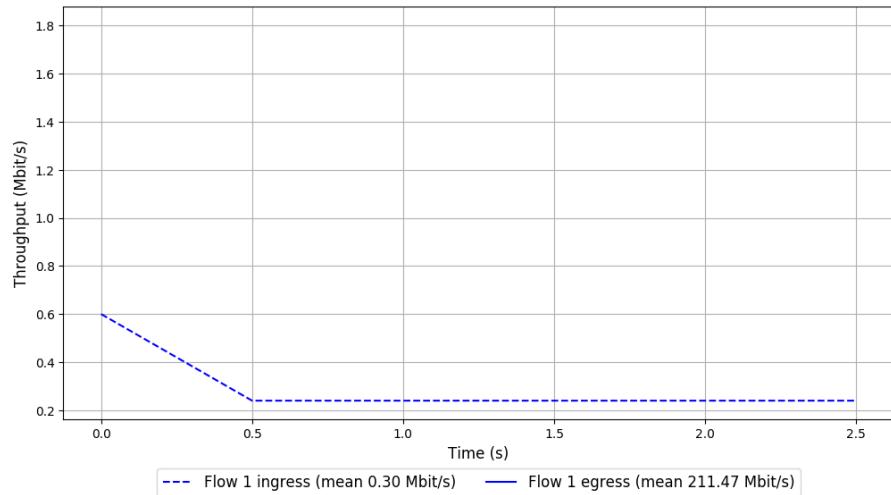
Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of KohoCC

Start at: Tue, 25 Jul 2017 06:55:25 +0000
End at: Tue, 25 Jul 2017 06:55:55 +0000
Local clock offset: 1.072 ms
Remote clock offset: -3.019 ms

Run 1: Report of KohoCC — Data Link



Run 2: Statistics of KohoCC

Start at: Tue, 25 Jul 2017 07:13:13 +0000
End at: Tue, 25 Jul 2017 07:13:43 +0000
Local clock offset: 1.092 ms
Remote clock offset: -2.985 ms

Run 2: Report of KohoCC — Data Link

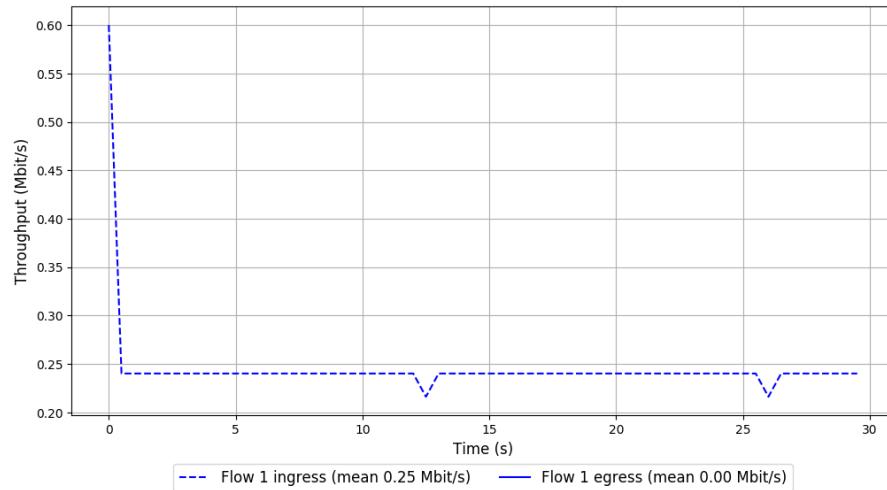


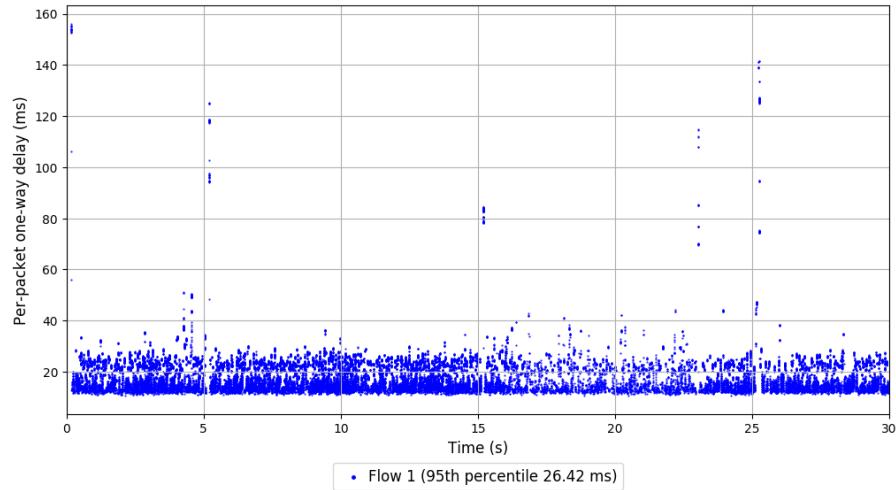
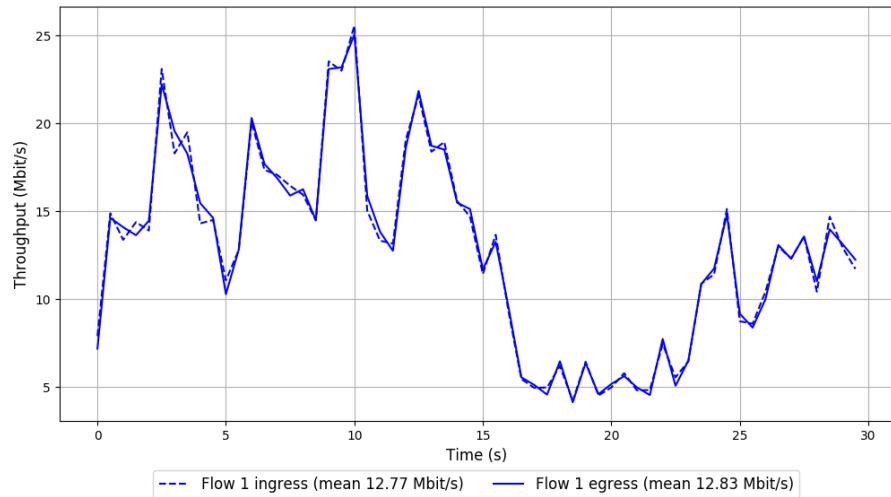
Figure is missing

Run 3: Statistics of KohoCC

```
Start at: Tue, 25 Jul 2017 07:31:01 +0000
End at: Tue, 25 Jul 2017 07:31:31 +0000
Local clock offset: 1.068 ms
Remote clock offset: -2.825 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:17 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.83 Mbit/s
95th percentile per-packet one-way delay: 26.424 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.83 Mbit/s
95th percentile per-packet one-way delay: 26.424 ms
Loss rate: 0.00%
```

Run 3: Report of KohoCC — Data Link

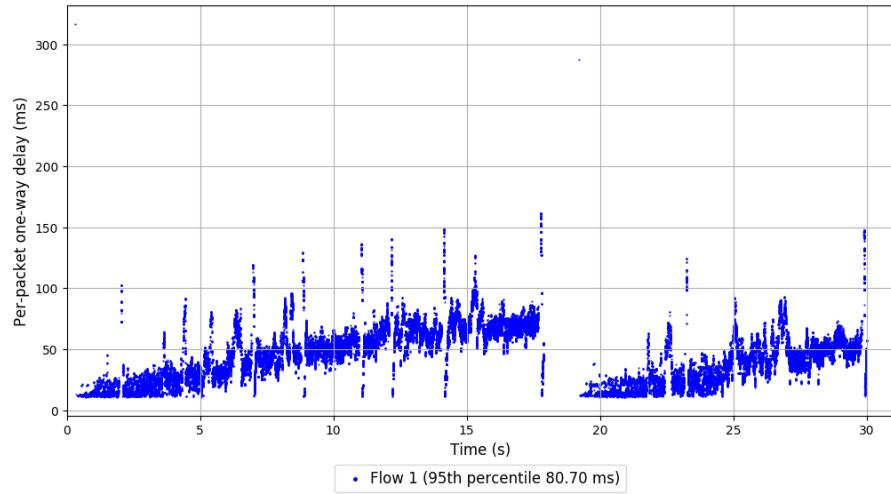
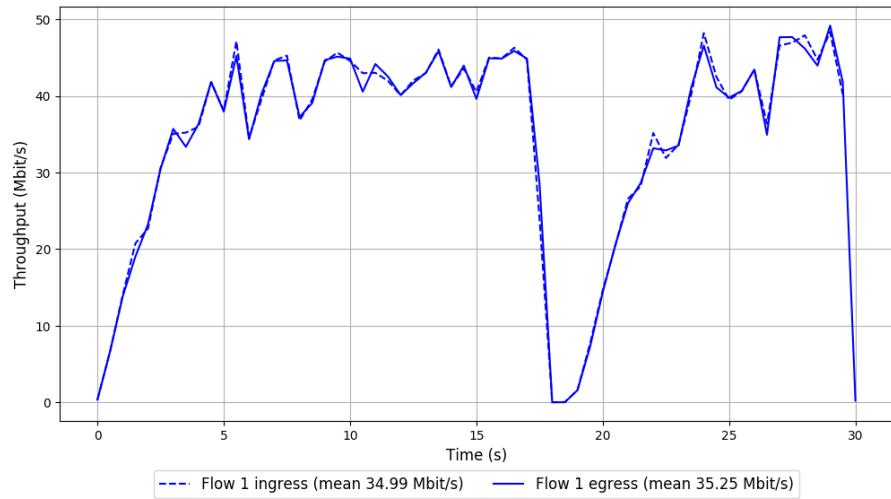


```
Run 1: Statistics of LEDBAT
```

```
Start at: Tue, 25 Jul 2017 06:43:34 +0000
End at: Tue, 25 Jul 2017 06:44:04 +0000
Local clock offset: 0.904 ms
Remote clock offset: -3.361 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:22 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 35.25 Mbit/s
95th percentile per-packet one-way delay: 80.704 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 35.25 Mbit/s
95th percentile per-packet one-way delay: 80.704 ms
Loss rate: 0.26%
```

Run 1: Report of LEDBAT — Data Link

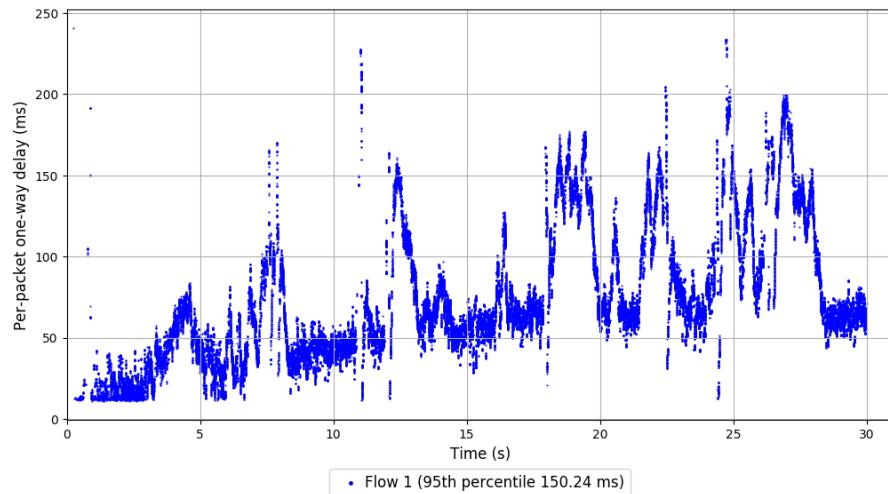
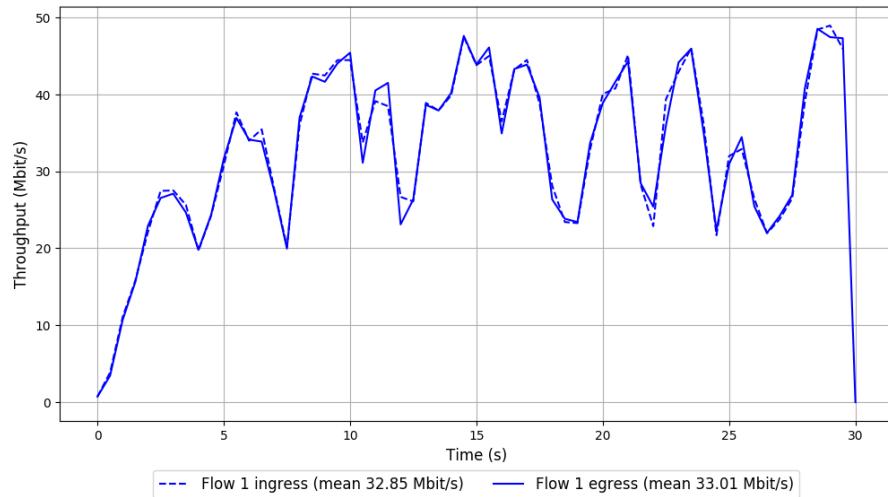


Run 2: Statistics of LEDBAT

```
Start at: Tue, 25 Jul 2017 07:01:22 +0000
End at: Tue, 25 Jul 2017 07:01:52 +0000
Local clock offset: 1.088 ms
Remote clock offset: -3.05 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:22 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 33.01 Mbit/s
95th percentile per-packet one-way delay: 150.243 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 33.01 Mbit/s
95th percentile per-packet one-way delay: 150.243 ms
Loss rate: 0.24%
```

Run 2: Report of LEDBAT — Data Link

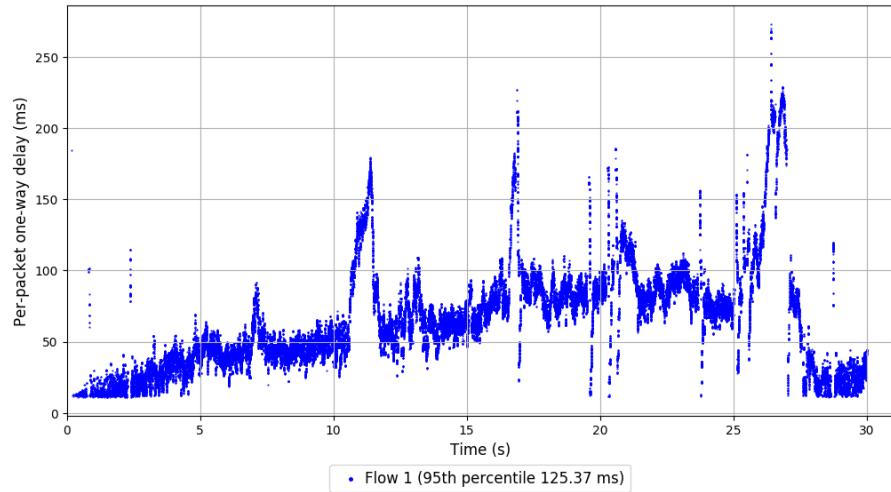
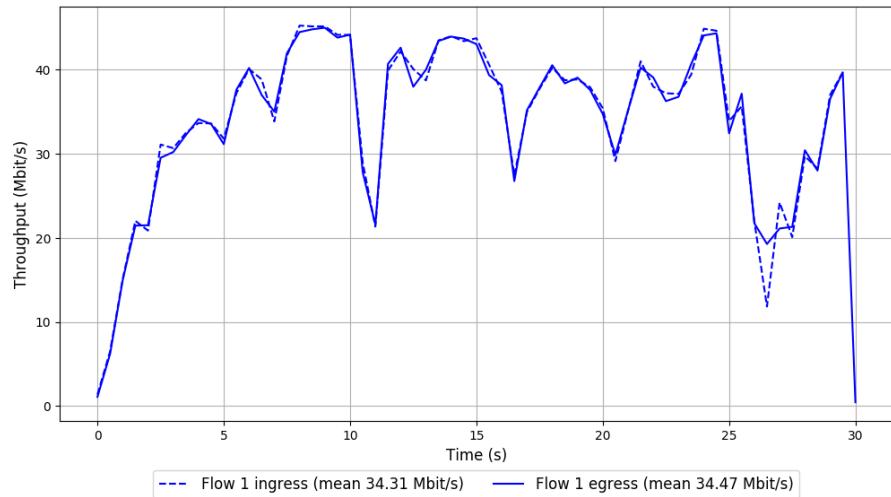


Run 3: Statistics of LEDBAT

```
Start at: Tue, 25 Jul 2017 07:19:10 +0000
End at: Tue, 25 Jul 2017 07:19:40 +0000
Local clock offset: 1.008 ms
Remote clock offset: -2.833 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.47 Mbit/s
95th percentile per-packet one-way delay: 125.370 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 34.47 Mbit/s
95th percentile per-packet one-way delay: 125.370 ms
Loss rate: 0.07%
```

Run 3: Report of LEDBAT — Data Link

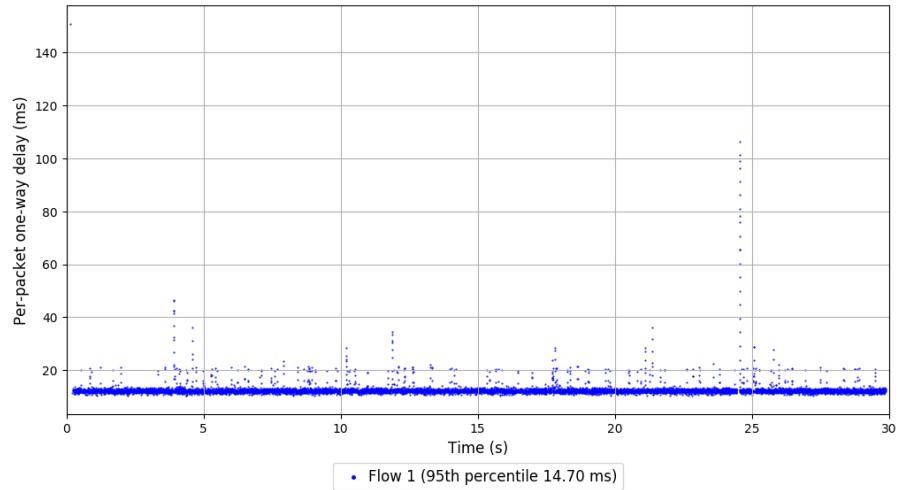
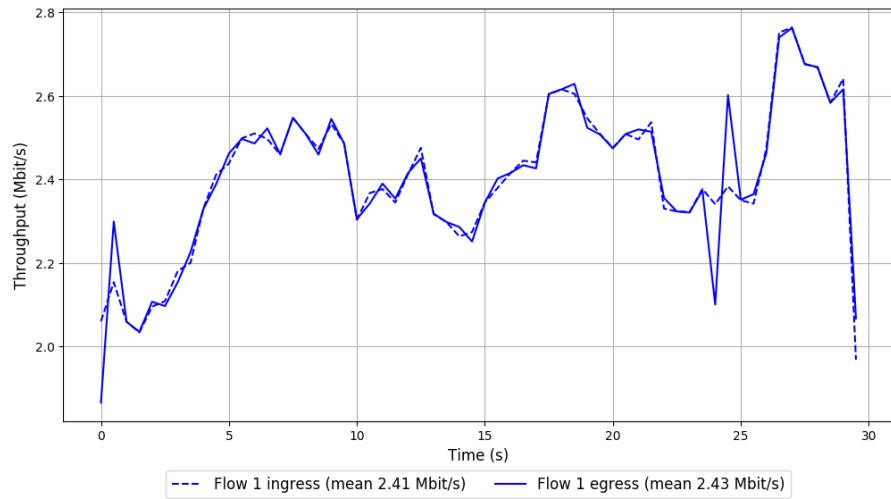


Run 1: Statistics of PCC

```
Start at: Tue, 25 Jul 2017 06:56:36 +0000
End at: Tue, 25 Jul 2017 06:57:06 +0000
Local clock offset: 1.002 ms
Remote clock offset: -3.022 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 14.700 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 14.700 ms
Loss rate: 0.00%
```

Run 1: Report of PCC — Data Link

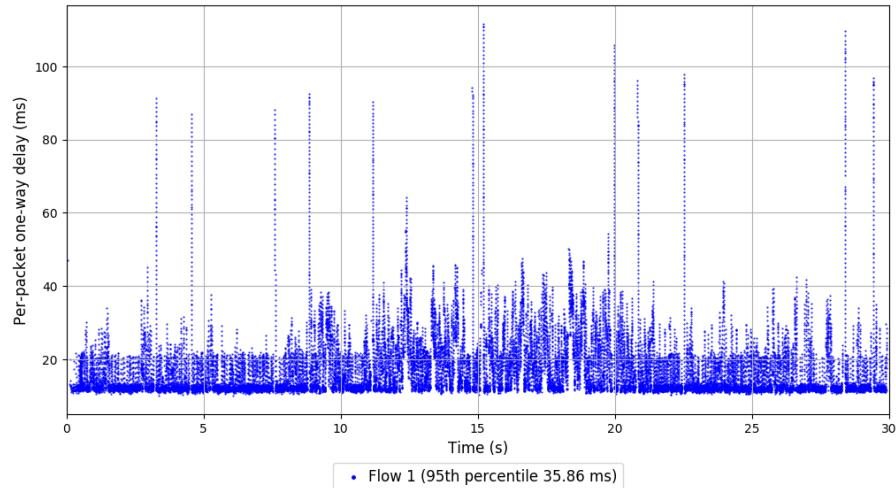
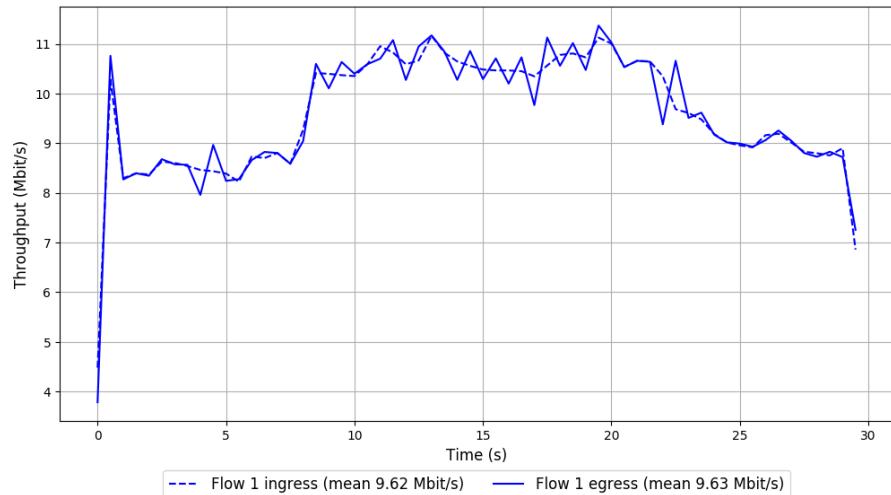


Run 2: Statistics of PCC

```
Start at: Tue, 25 Jul 2017 07:14:24 +0000
End at: Tue, 25 Jul 2017 07:14:54 +0000
Local clock offset: 1.108 ms
Remote clock offset: -2.959 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.63 Mbit/s
95th percentile per-packet one-way delay: 35.860 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.63 Mbit/s
95th percentile per-packet one-way delay: 35.860 ms
Loss rate: 0.00%
```

Run 2: Report of PCC — Data Link

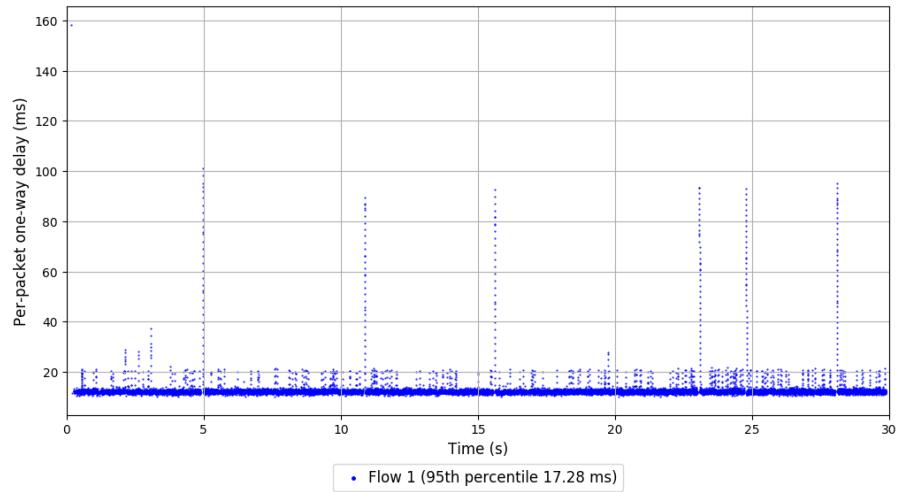
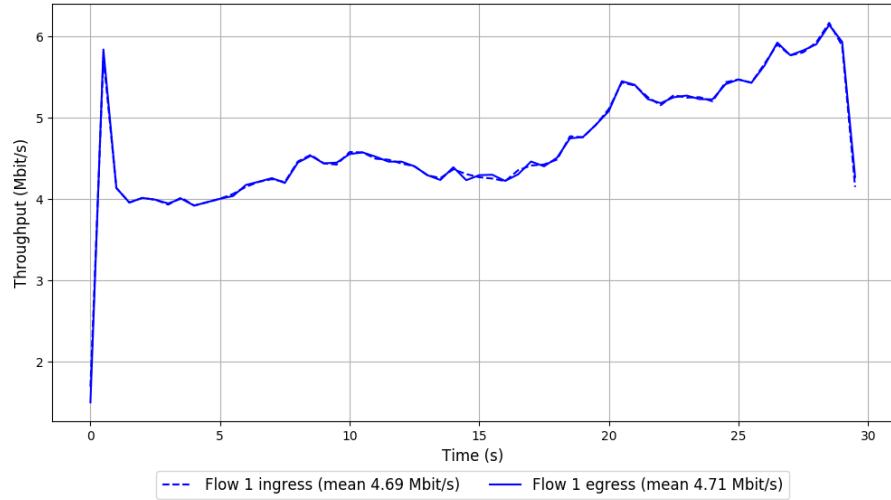


Run 3: Statistics of PCC

```
Start at: Tue, 25 Jul 2017 07:32:12 +0000
End at: Tue, 25 Jul 2017 07:32:42 +0000
Local clock offset: 1.091 ms
Remote clock offset: -2.904 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.71 Mbit/s
95th percentile per-packet one-way delay: 17.280 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.71 Mbit/s
95th percentile per-packet one-way delay: 17.280 ms
Loss rate: 0.00%
```

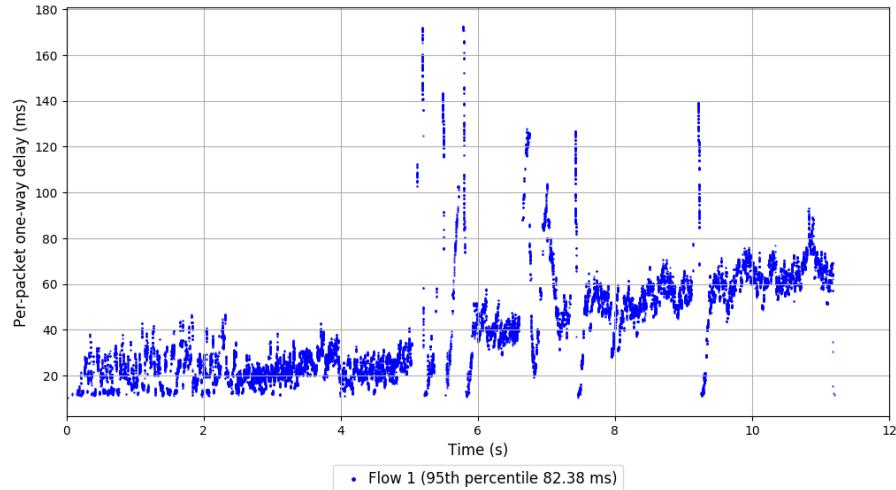
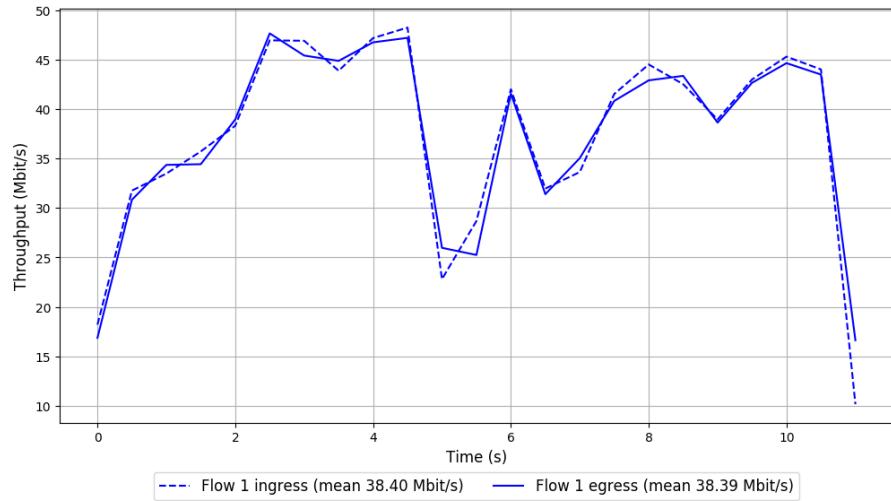
Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: Tue, 25 Jul 2017 06:53:02 +0000
End at: Tue, 25 Jul 2017 06:53:32 +0000
Local clock offset: 0.974 ms
Remote clock offset: -3.075 ms

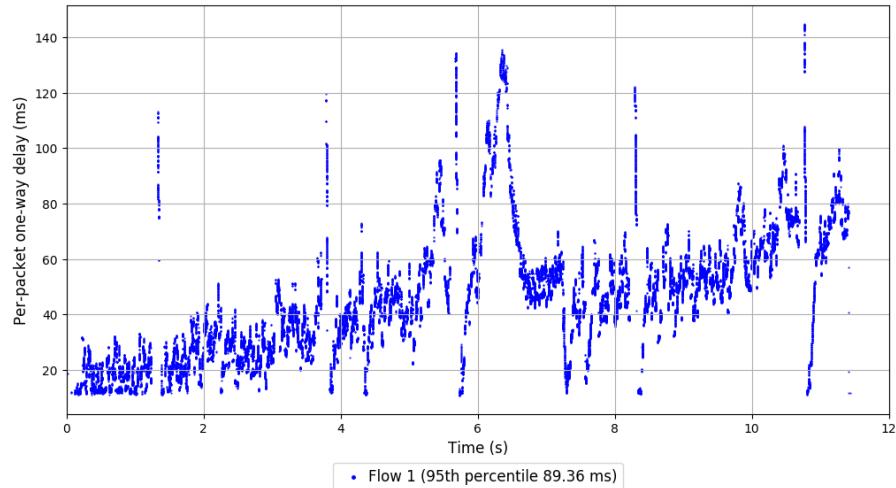
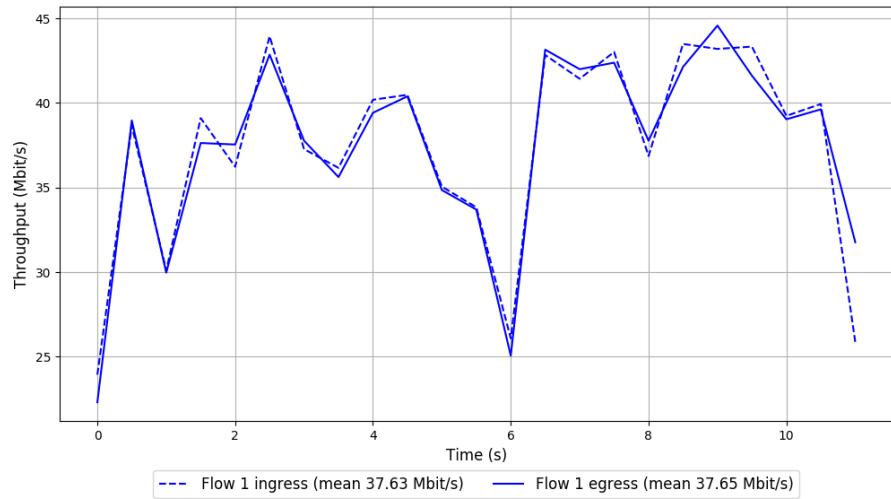
Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: Tue, 25 Jul 2017 07:10:49 +0000
End at: Tue, 25 Jul 2017 07:11:19 +0000
Local clock offset: 1.028 ms
Remote clock offset: -2.996 ms

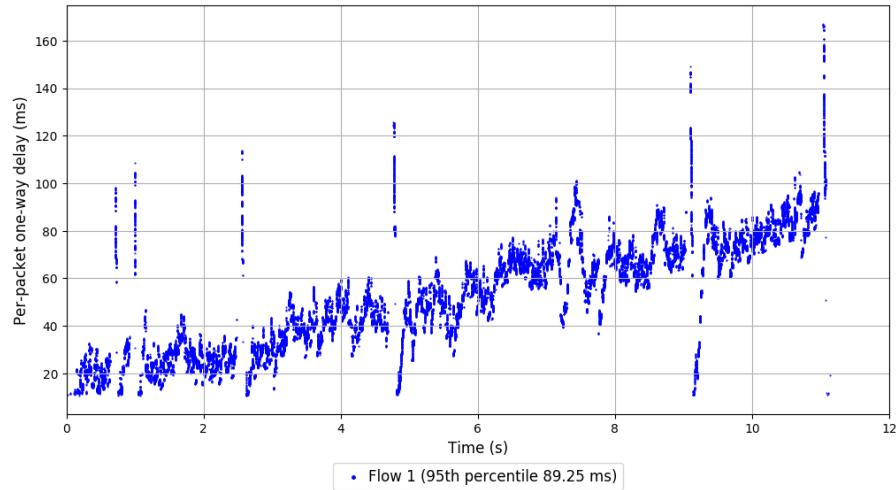
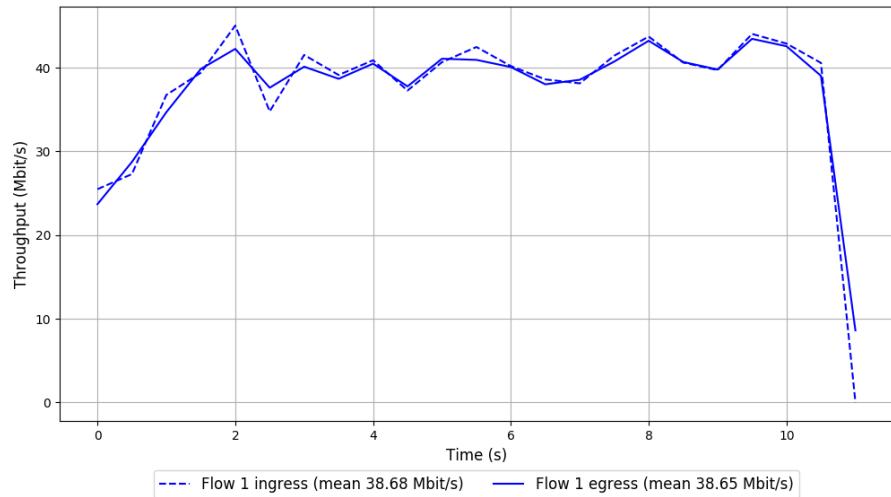
Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: Tue, 25 Jul 2017 07:28:37 +0000
End at: Tue, 25 Jul 2017 07:29:07 +0000
Local clock offset: 1.147 ms
Remote clock offset: -2.803 ms

Run 3: Report of QUIC Cubic — Data Link



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

```
Start at: Tue, 25 Jul 2017 06:54:13 +0000
```

```
End at: Tue, 25 Jul 2017 06:54:43 +0000
```

```
Local clock offset: 1.059 ms
```

```
Remote clock offset: -3.087 ms
```

```
# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:36 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 36.73 Mbit/s
```

```
95th percentile per-packet one-way delay: 82.548 ms
```

```
Loss rate: 0.07%
```

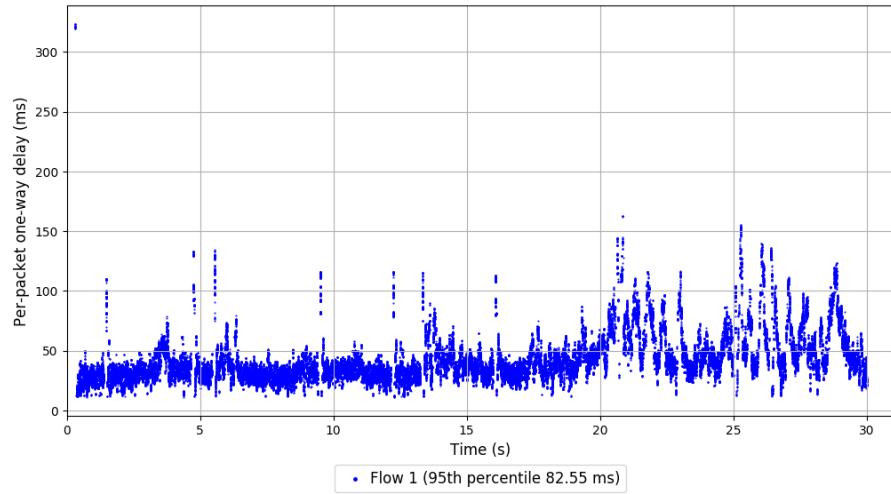
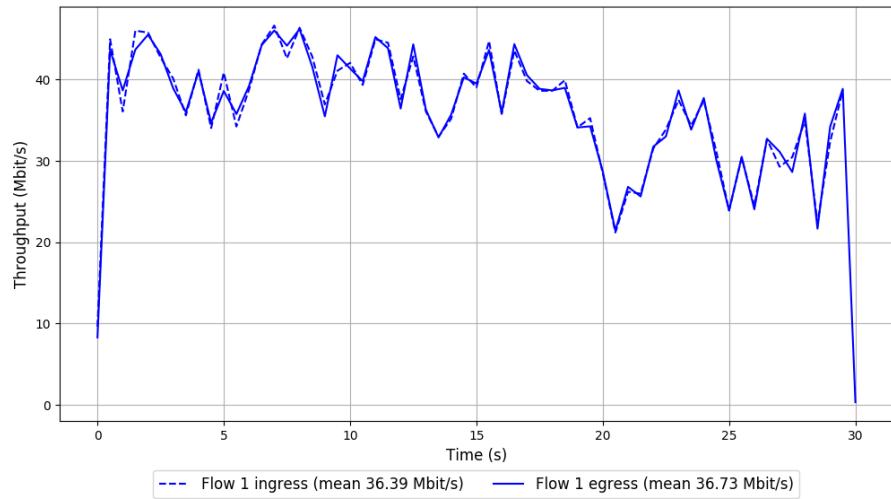
```
-- Flow 1:
```

```
Average throughput: 36.73 Mbit/s
```

```
95th percentile per-packet one-way delay: 82.548 ms
```

```
Loss rate: 0.07%
```

Run 1: Report of Saturator — Data Link

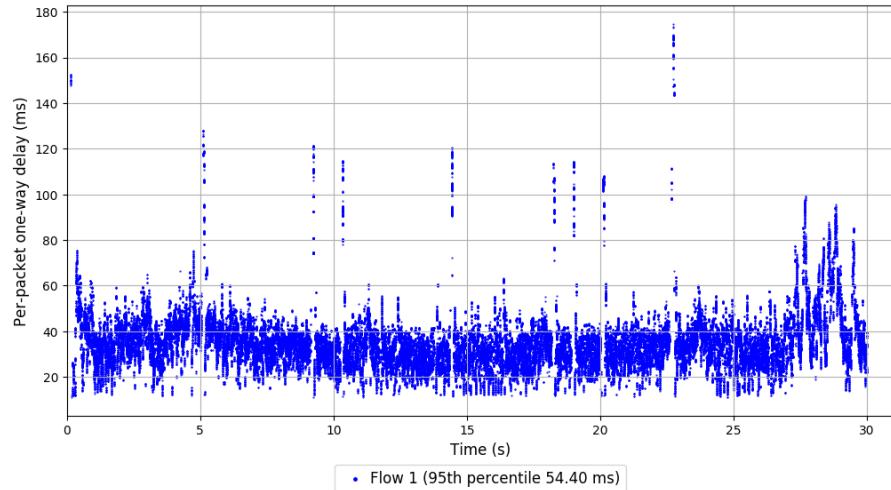
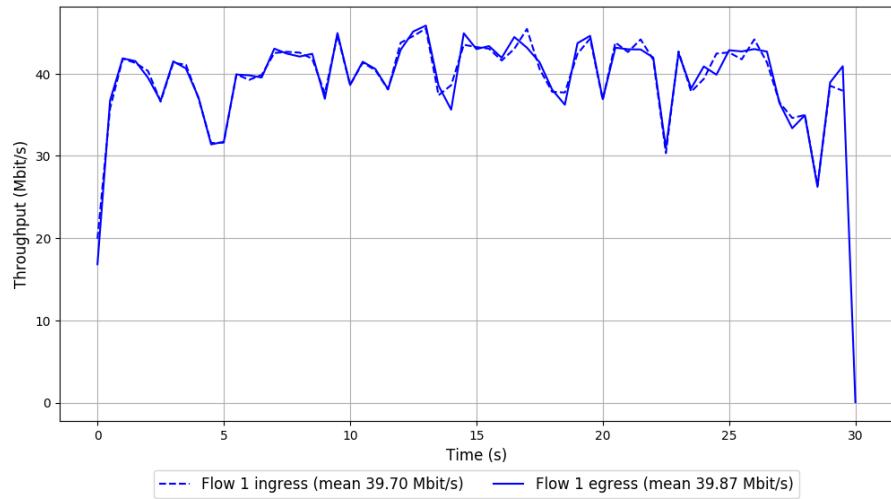


Run 2: Statistics of Saturator

```
Start at: Tue, 25 Jul 2017 07:12:00 +0000
End at: Tue, 25 Jul 2017 07:12:30 +0000
Local clock offset: 1.018 ms
Remote clock offset: -2.906 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:39 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.87 Mbit/s
95th percentile per-packet one-way delay: 54.403 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 39.87 Mbit/s
95th percentile per-packet one-way delay: 54.403 ms
Loss rate: 0.00%
```

Run 2: Report of Saturator — Data Link

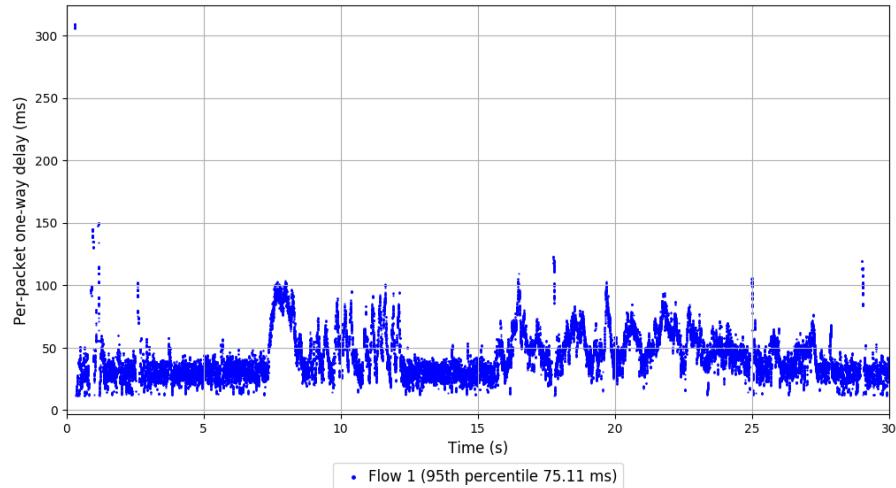
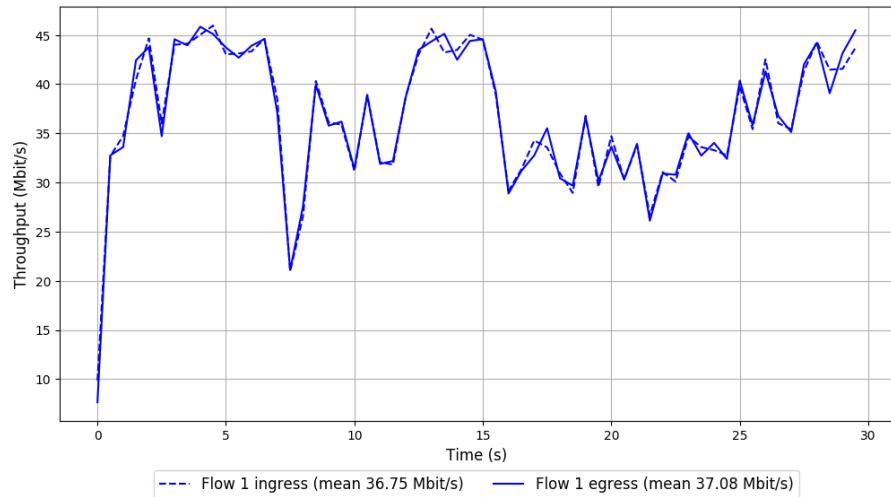


Run 3: Statistics of Saturator

```
Start at: Tue, 25 Jul 2017 07:29:48 +0000
End at: Tue, 25 Jul 2017 07:30:18 +0000
Local clock offset: 1.064 ms
Remote clock offset: -2.82 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:43 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.08 Mbit/s
95th percentile per-packet one-way delay: 75.109 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 37.08 Mbit/s
95th percentile per-packet one-way delay: 75.109 ms
Loss rate: 0.07%
```

Run 3: Report of Saturator — Data Link



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

```
Start at: Tue, 25 Jul 2017 06:48:20 +0000
```

```
End at: Tue, 25 Jul 2017 06:48:50 +0000
```

```
Local clock offset: 1.005 ms
```

```
Remote clock offset: -3.157 ms
```

```
# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:43 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 0.22 Mbit/s
```

```
95th percentile per-packet one-way delay: 13.823 ms
```

```
Loss rate: 0.00%
```

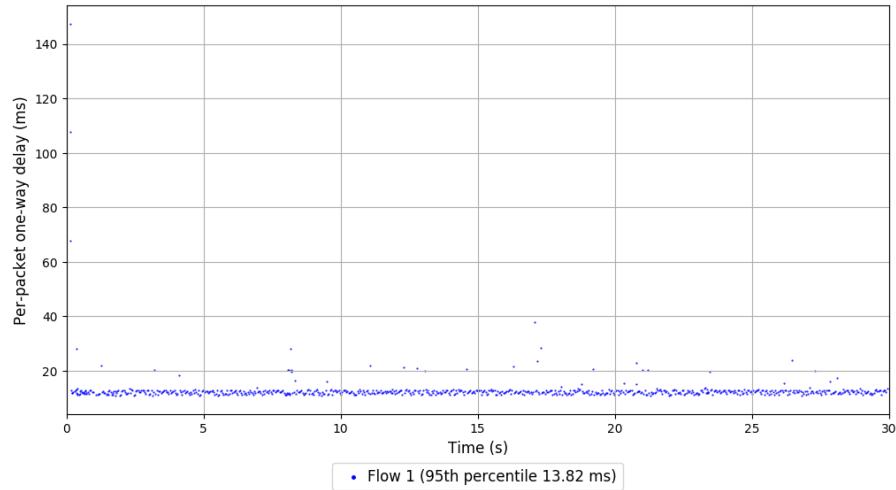
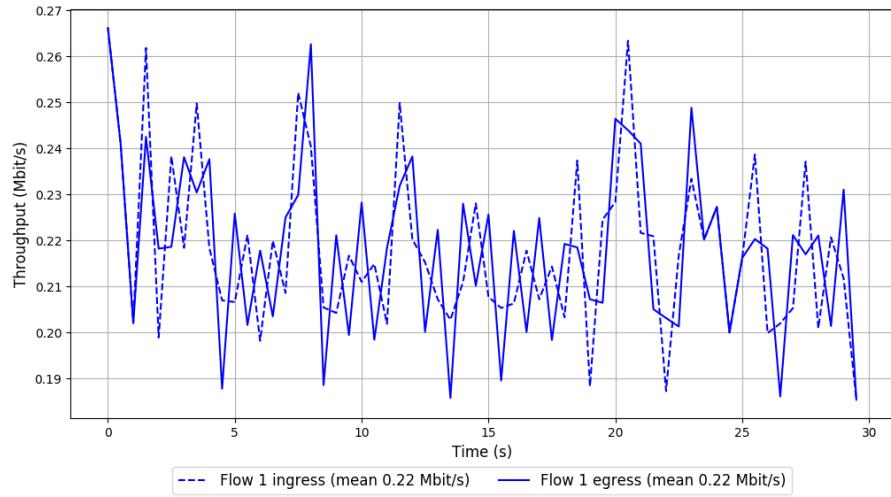
```
-- Flow 1:
```

```
Average throughput: 0.22 Mbit/s
```

```
95th percentile per-packet one-way delay: 13.823 ms
```

```
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

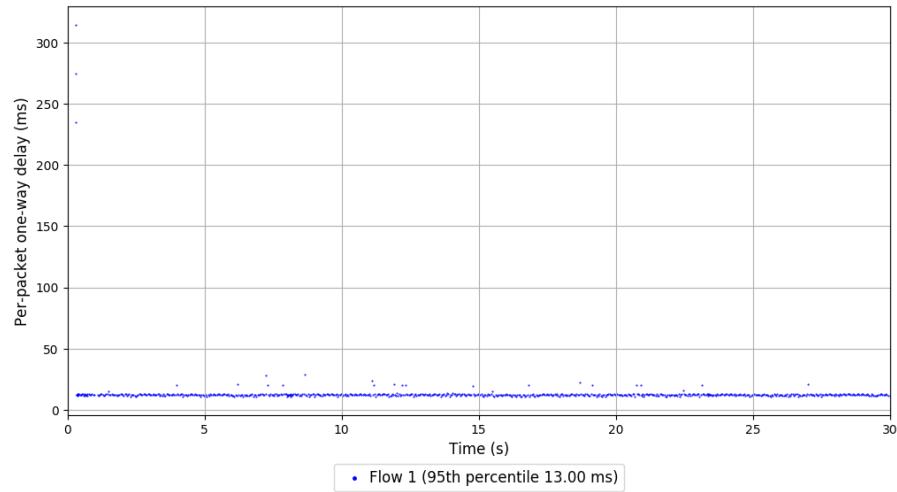
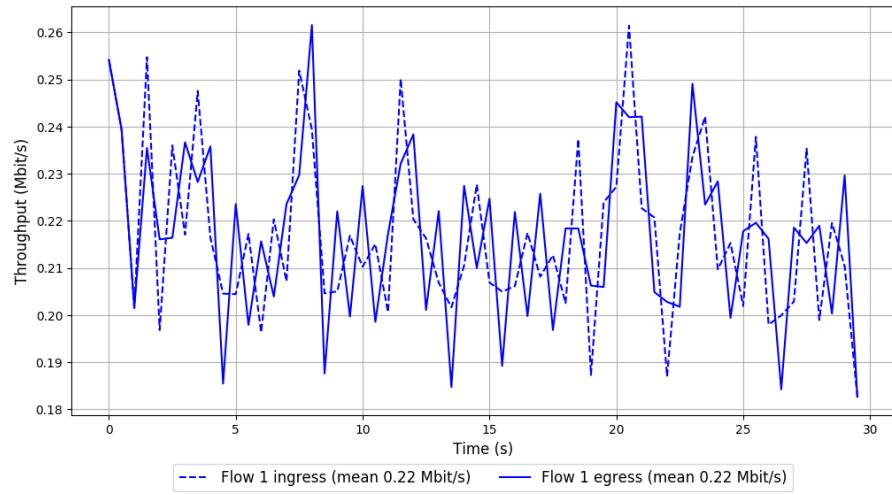


Run 2: Statistics of SCReAM

```
Start at: Tue, 25 Jul 2017 07:06:07 +0000
End at: Tue, 25 Jul 2017 07:06:37 +0000
Local clock offset: 1.128 ms
Remote clock offset: -2.969 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:43 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.003 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.003 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

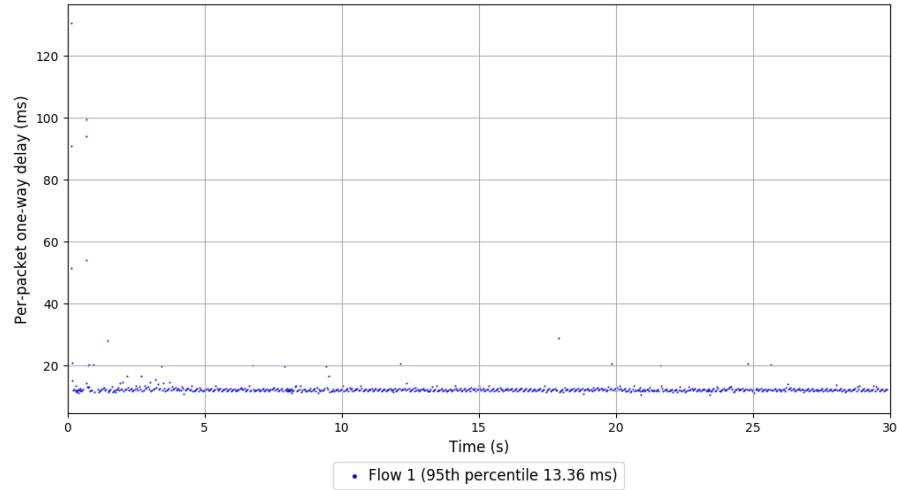
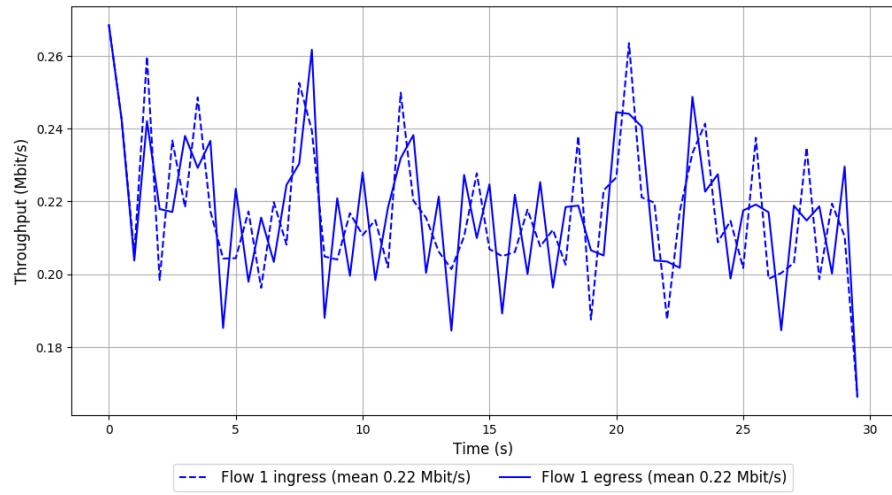


Run 3: Statistics of SCReAM

```
Start at: Tue, 25 Jul 2017 07:23:55 +0000
End at: Tue, 25 Jul 2017 07:24:25 +0000
Local clock offset: 1.131 ms
Remote clock offset: -2.845 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:43 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.359 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.359 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

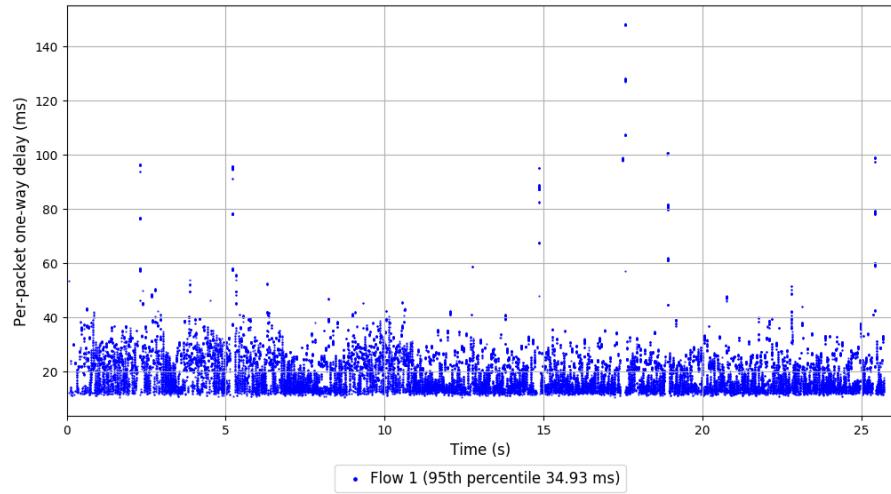
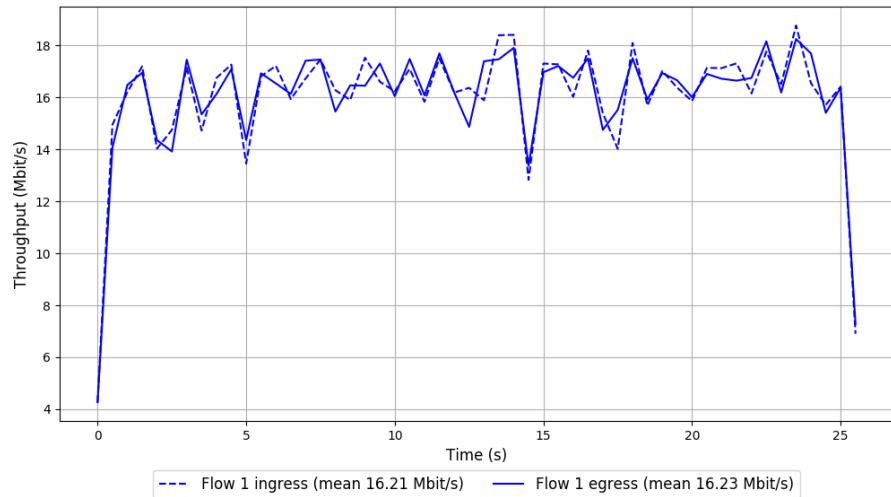


Run 1: Statistics of Sprout

```
Start at: Tue, 25 Jul 2017 06:47:09 +0000
End at: Tue, 25 Jul 2017 06:47:39 +0000
Local clock offset: 0.908 ms
Remote clock offset: -3.272 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:45 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.23 Mbit/s
95th percentile per-packet one-way delay: 34.932 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 16.23 Mbit/s
95th percentile per-packet one-way delay: 34.932 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

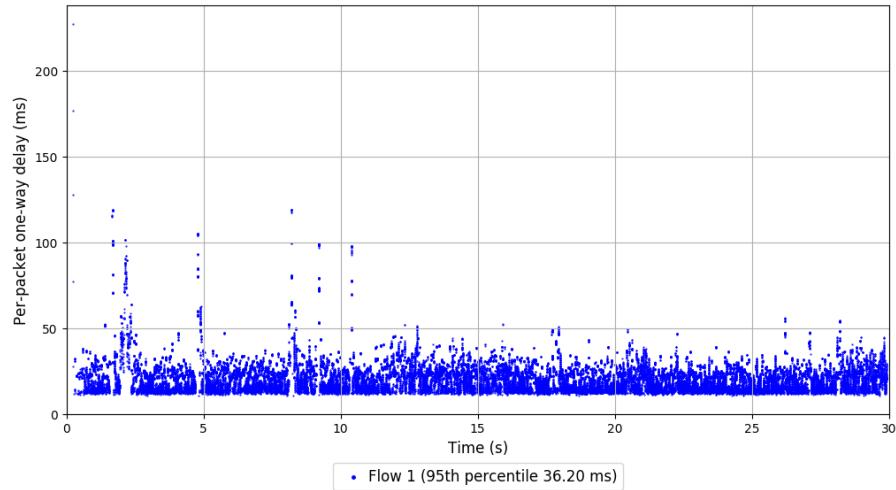
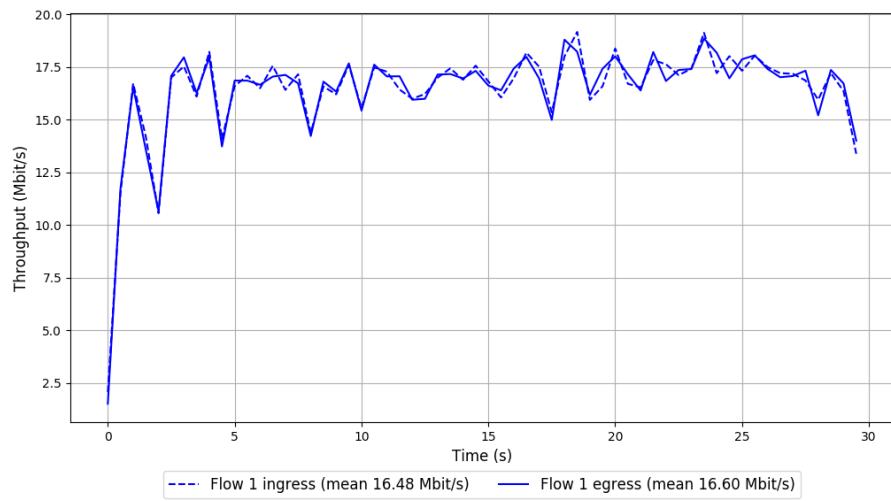


Run 2: Statistics of Sprout

```
Start at: Tue, 25 Jul 2017 07:04:56 +0000
End at: Tue, 25 Jul 2017 07:05:26 +0000
Local clock offset: 1.109 ms
Remote clock offset: -2.959 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:46 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.60 Mbit/s
95th percentile per-packet one-way delay: 36.201 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 16.60 Mbit/s
95th percentile per-packet one-way delay: 36.201 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

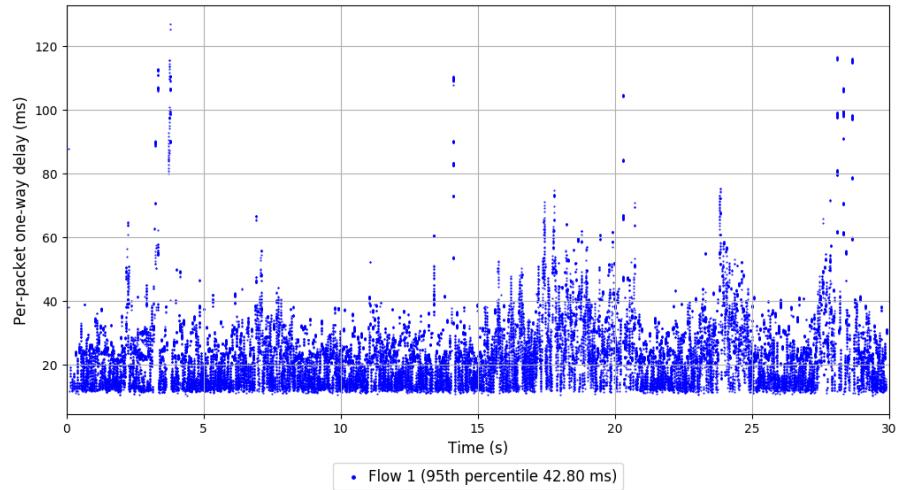
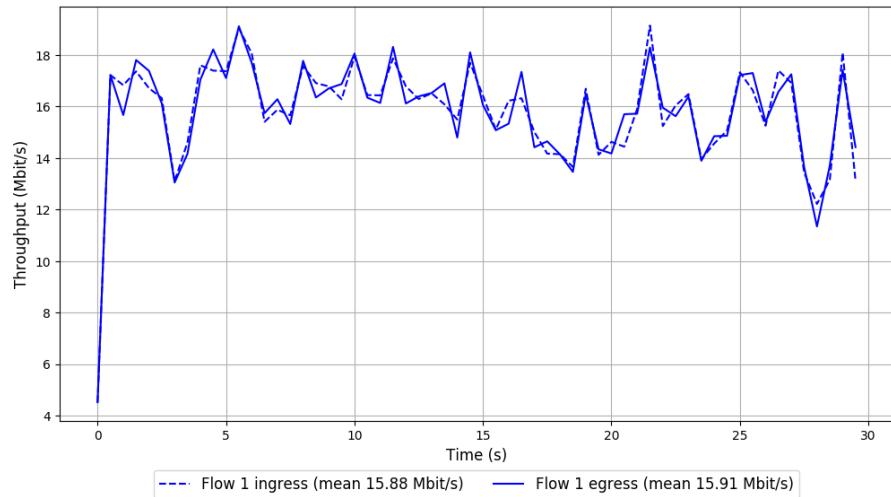


Run 3: Statistics of Sprout

```
Start at: Tue, 25 Jul 2017 07:22:44 +0000
End at: Tue, 25 Jul 2017 07:23:14 +0000
Local clock offset: 1.131 ms
Remote clock offset: -2.864 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:48 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.91 Mbit/s
95th percentile per-packet one-way delay: 42.801 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 15.91 Mbit/s
95th percentile per-packet one-way delay: 42.801 ms
Loss rate: 0.02%
```

Run 3: Report of Sprout — Data Link

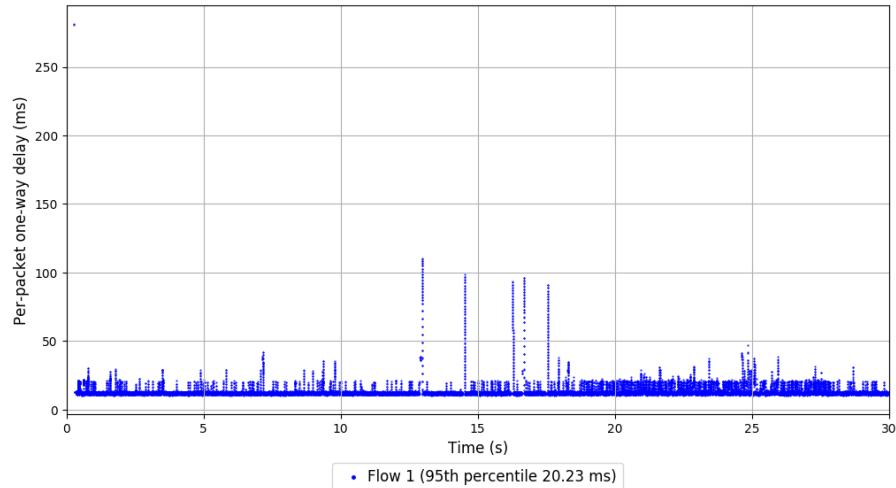
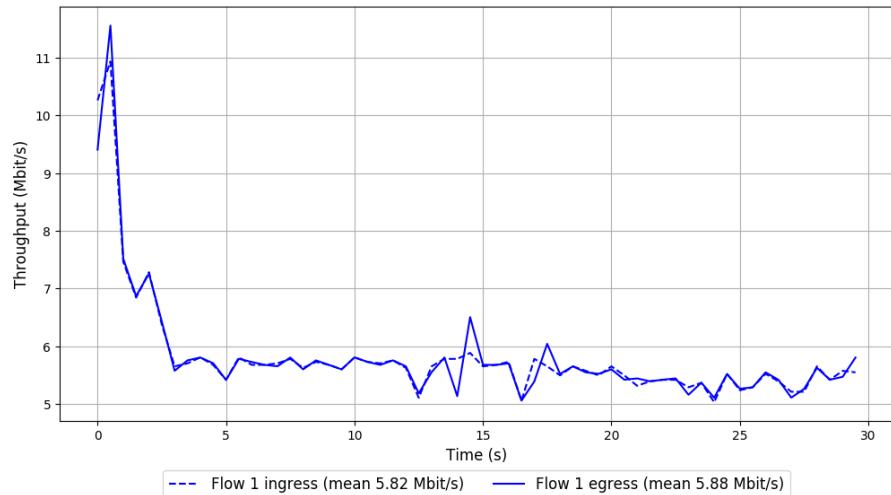


Run 1: Statistics of TaoVA-100x

```
Start at: Tue, 25 Jul 2017 06:51:51 +0000
End at: Tue, 25 Jul 2017 06:52:21 +0000
Local clock offset: 1.05 ms
Remote clock offset: -3.182 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:49 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.88 Mbit/s
95th percentile per-packet one-way delay: 20.227 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.88 Mbit/s
95th percentile per-packet one-way delay: 20.227 ms
Loss rate: 0.00%
```

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

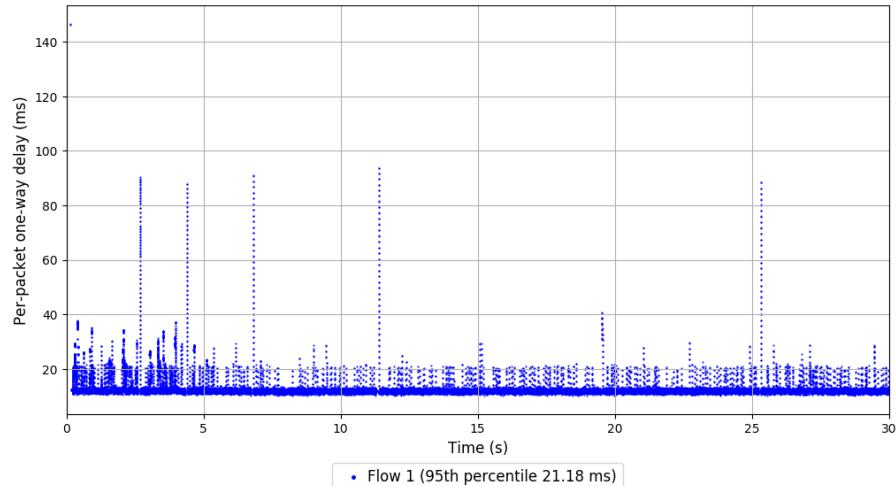
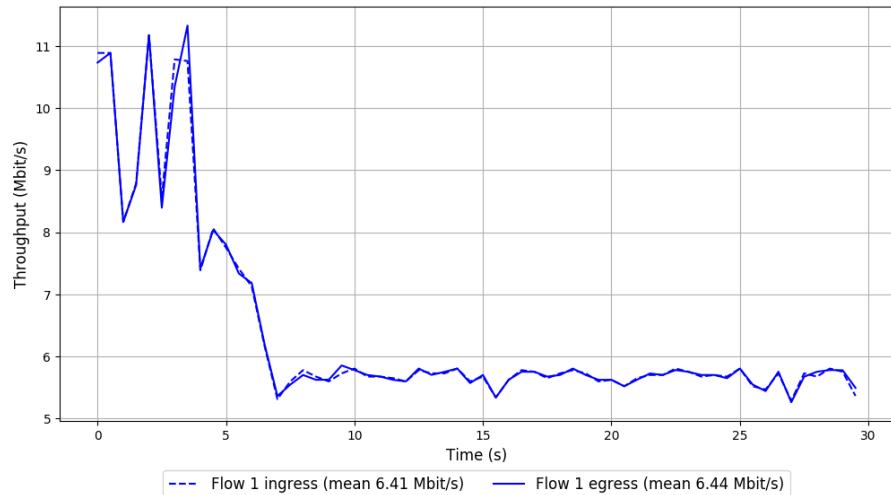


Run 2: Statistics of TaoVA-100x

```
Start at: Tue, 25 Jul 2017 07:09:38 +0000
End at: Tue, 25 Jul 2017 07:10:08 +0000
Local clock offset: 1.117 ms
Remote clock offset: -2.915 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:51 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.44 Mbit/s
95th percentile per-packet one-way delay: 21.183 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.44 Mbit/s
95th percentile per-packet one-way delay: 21.183 ms
Loss rate: 0.00%
```

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

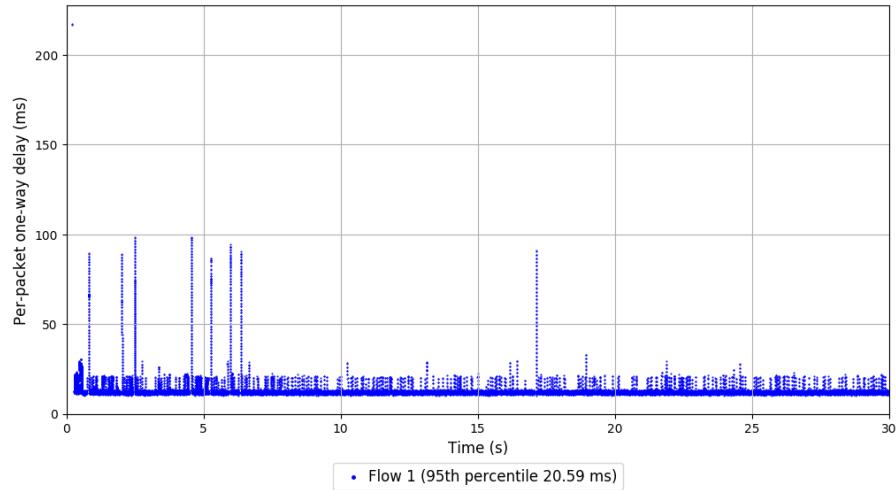
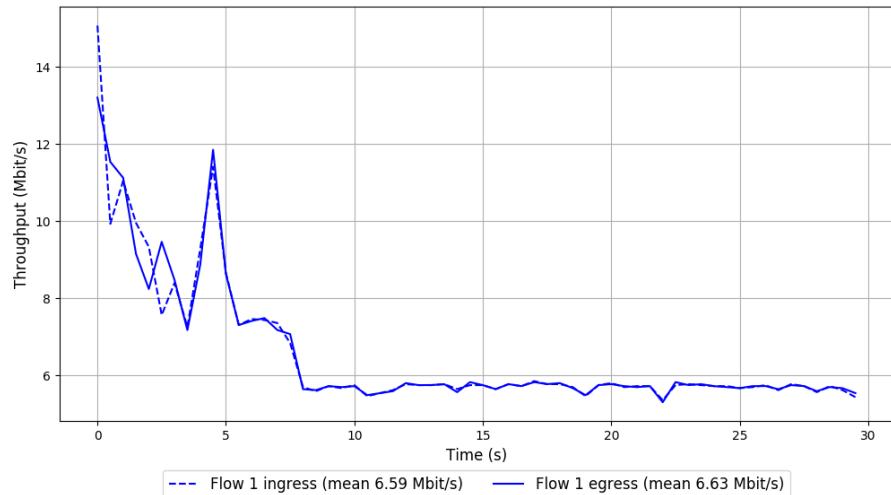


Run 3: Statistics of TaoVA-100x

```
Start at: Tue, 25 Jul 2017 07:27:26 +0000
End at: Tue, 25 Jul 2017 07:27:57 +0000
Local clock offset: 1.062 ms
Remote clock offset: -2.85 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:51 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 20.594 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 20.594 ms
Loss rate: 0.00%
```

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

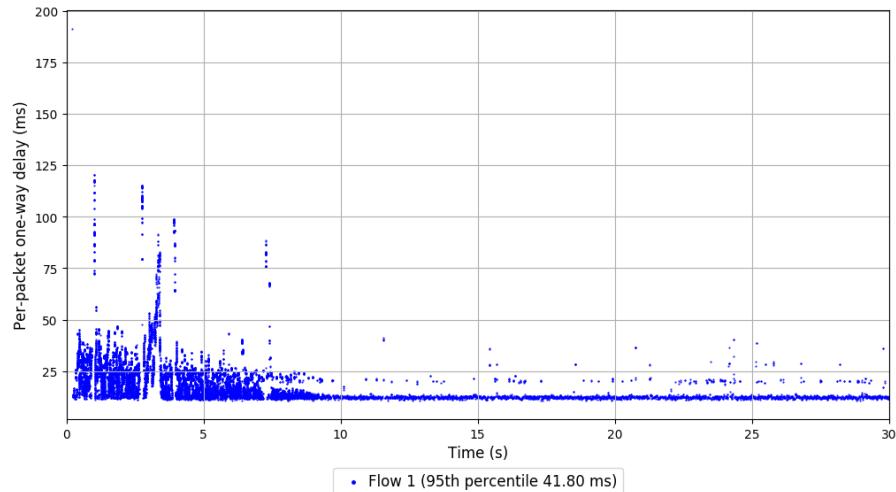
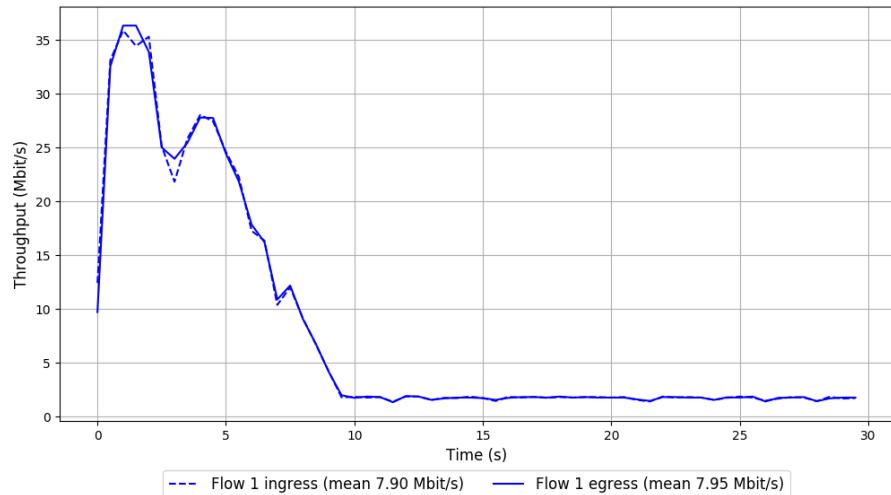


Run 1: Statistics of TCP Vegas

```
Start at: Tue, 25 Jul 2017 06:50:40 +0000
End at: Tue, 25 Jul 2017 06:51:10 +0000
Local clock offset: 1.006 ms
Remote clock offset: -3.138 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:53 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.95 Mbit/s
95th percentile per-packet one-way delay: 41.799 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.95 Mbit/s
95th percentile per-packet one-way delay: 41.799 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Vegas — Data Link

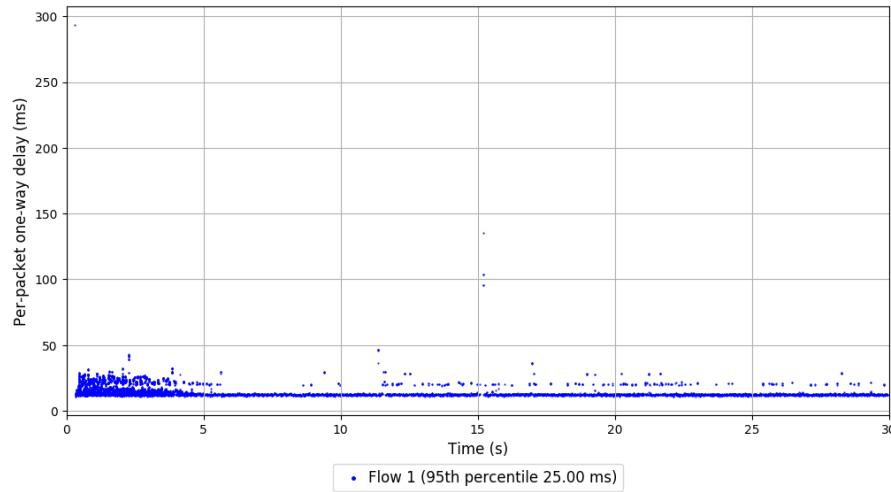
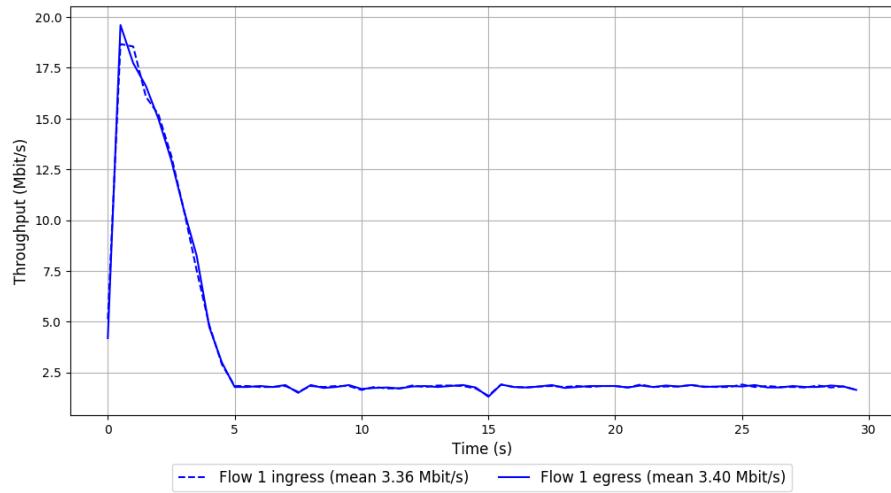


Run 2: Statistics of TCP Vegas

```
Start at: Tue, 25 Jul 2017 07:08:28 +0000
End at: Tue, 25 Jul 2017 07:08:58 +0000
Local clock offset: 1.016 ms
Remote clock offset: -3.042 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:53 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.40 Mbit/s
95th percentile per-packet one-way delay: 24.999 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.40 Mbit/s
95th percentile per-packet one-way delay: 24.999 ms
Loss rate: 0.00%
```

Run 2: Report of TCP Vegas — Data Link

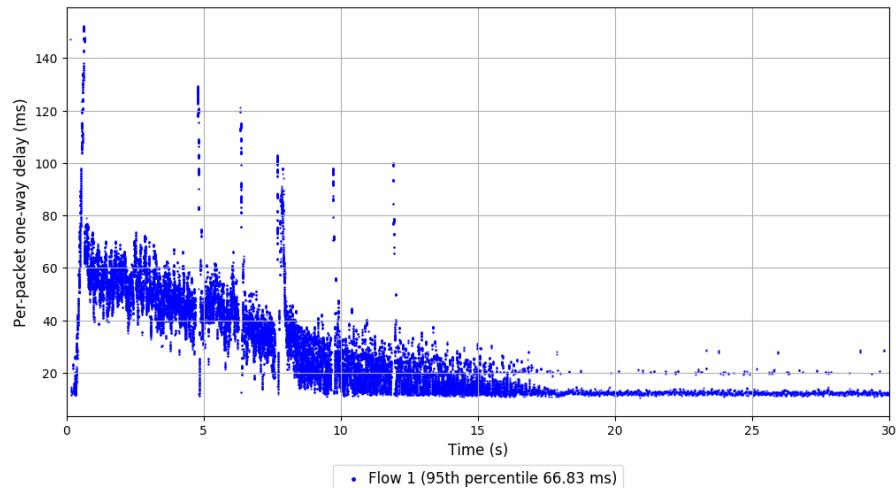
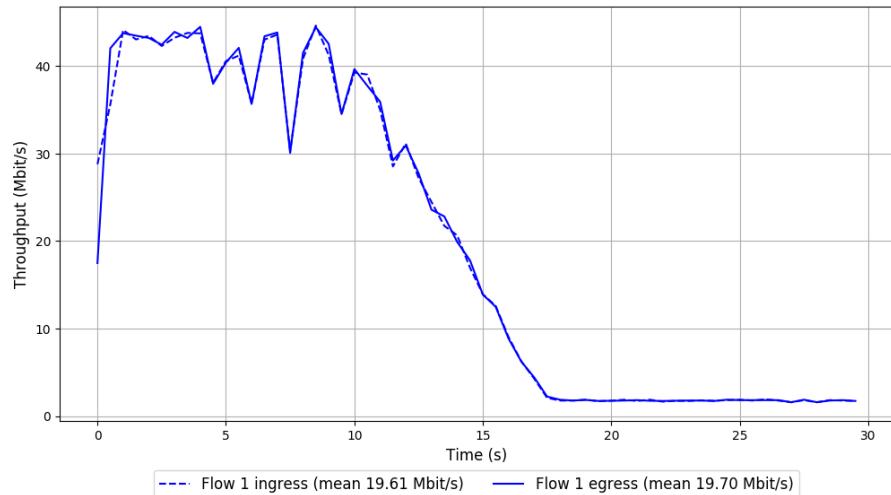


Run 3: Statistics of TCP Vegas

```
Start at: Tue, 25 Jul 2017 07:26:15 +0000
End at: Tue, 25 Jul 2017 07:26:45 +0000
Local clock offset: 1.025 ms
Remote clock offset: -2.846 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:55 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 19.70 Mbit/s
95th percentile per-packet one-way delay: 66.831 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 19.70 Mbit/s
95th percentile per-packet one-way delay: 66.831 ms
Loss rate: 0.00%
```

Run 3: Report of TCP Vegas — Data Link

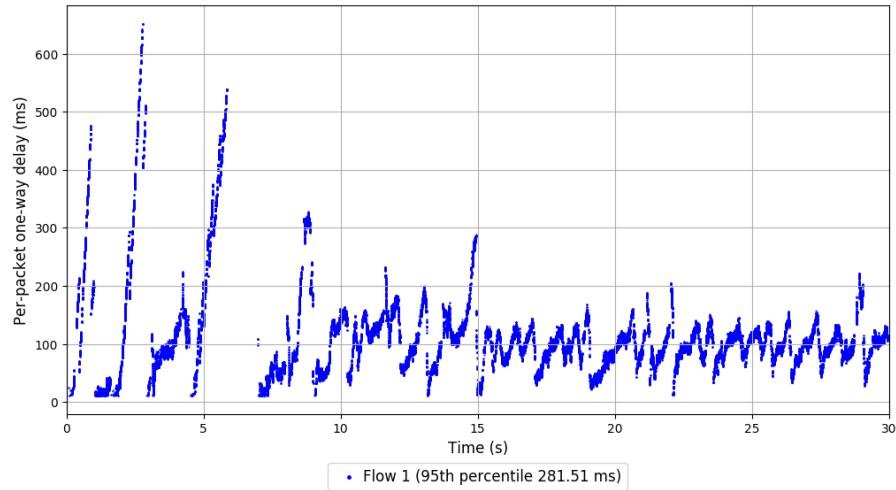
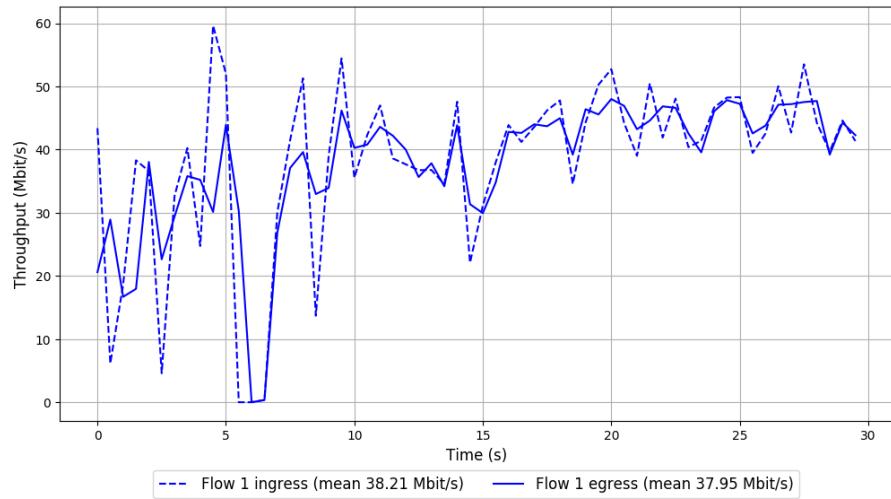


Run 1: Statistics of Verus

```
Start at: Tue, 25 Jul 2017 07:00:09 +0000
End at: Tue, 25 Jul 2017 07:00:39 +0000
Local clock offset: 1.095 ms
Remote clock offset: -3.054 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:32:58 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.95 Mbit/s
95th percentile per-packet one-way delay: 281.506 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 37.95 Mbit/s
95th percentile per-packet one-way delay: 281.506 ms
Loss rate: 0.67%
```

Run 1: Report of Verus — Data Link

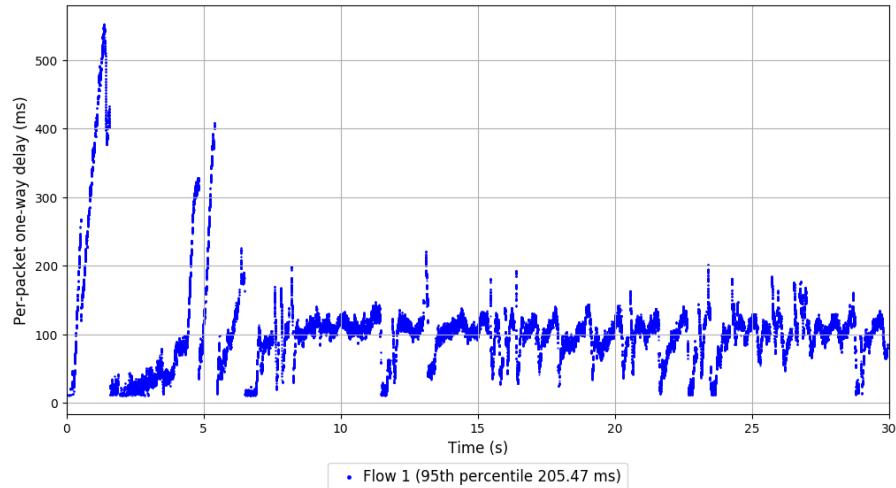
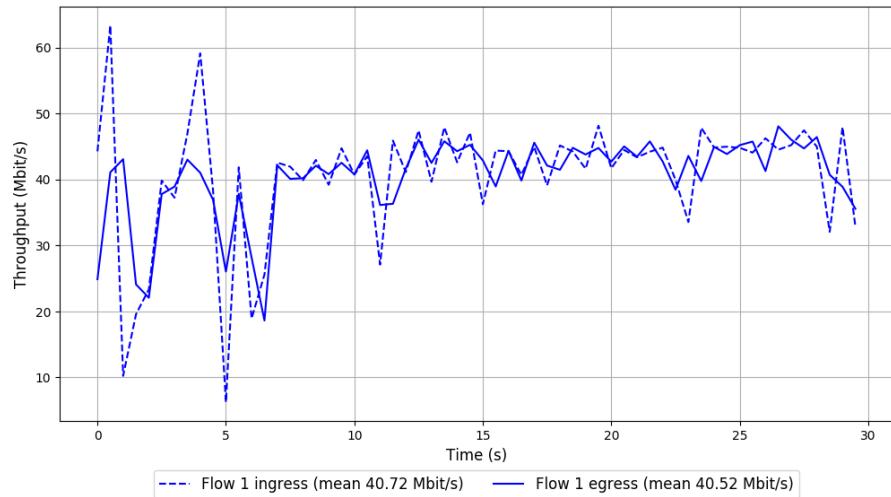


Run 2: Statistics of Verus

```
Start at: Tue, 25 Jul 2017 07:17:57 +0000
End at: Tue, 25 Jul 2017 07:18:27 +0000
Local clock offset: 1.11 ms
Remote clock offset: -2.852 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:33:01 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.52 Mbit/s
95th percentile per-packet one-way delay: 205.474 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 40.52 Mbit/s
95th percentile per-packet one-way delay: 205.474 ms
Loss rate: 0.48%
```

Run 2: Report of Verus — Data Link

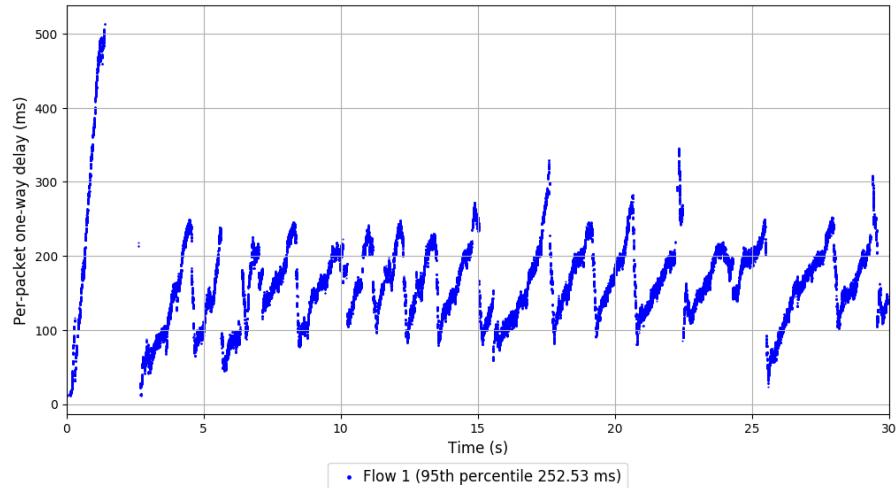
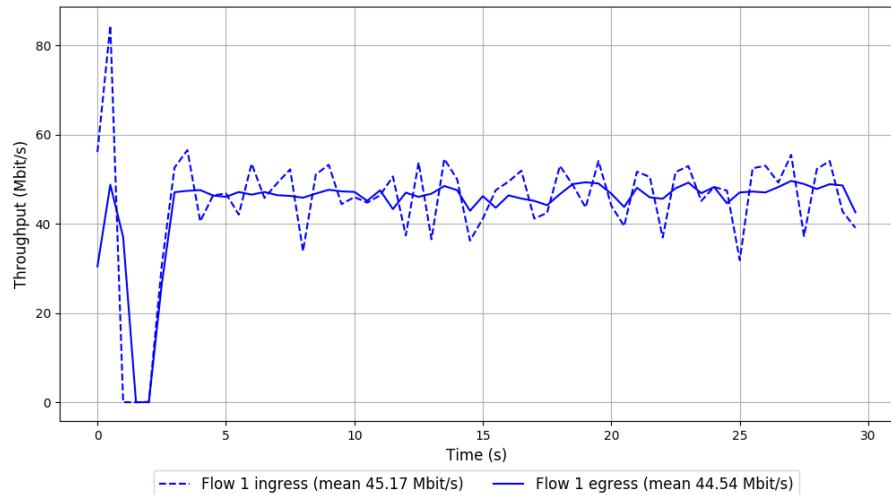


Run 3: Statistics of Verus

```
Start at: Tue, 25 Jul 2017 07:35:47 +0000
End at: Tue, 25 Jul 2017 07:36:17 +0000
Local clock offset: 1.08 ms
Remote clock offset: -2.953 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:33:06 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.54 Mbit/s
95th percentile per-packet one-way delay: 252.527 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 44.54 Mbit/s
95th percentile per-packet one-way delay: 252.527 ms
Loss rate: 1.34%
```

Run 3: Report of Verus — Data Link

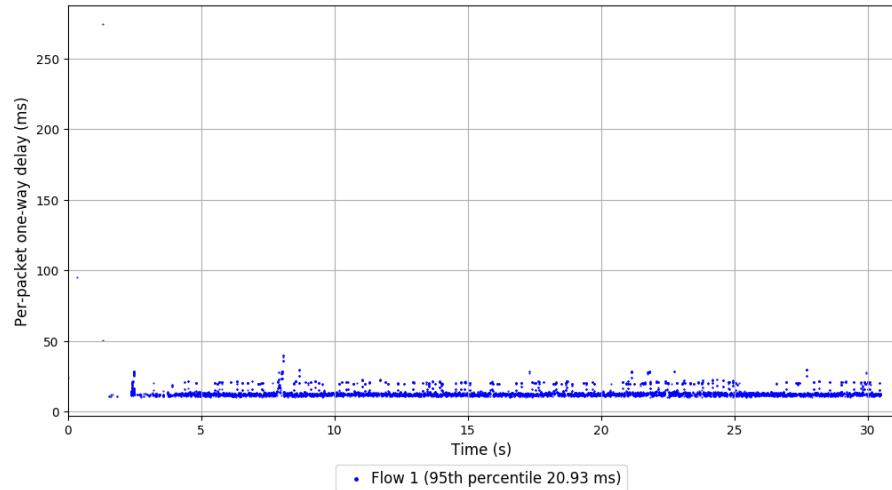
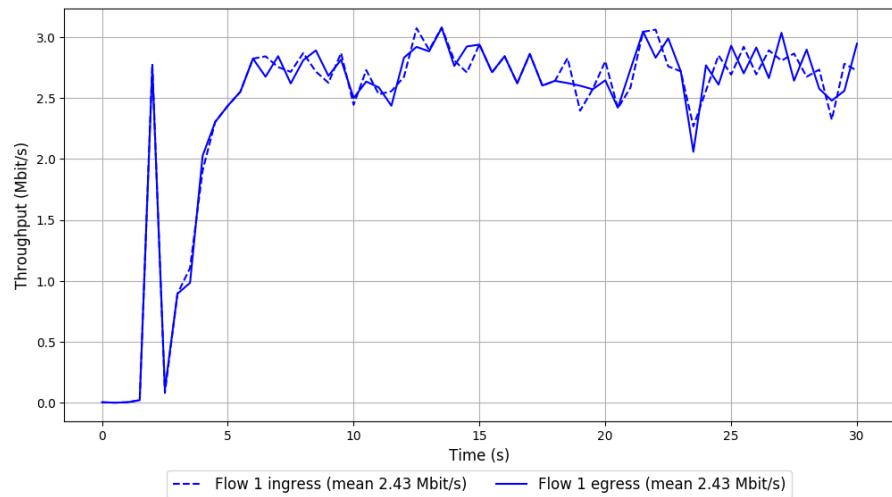


```
Run 1: Statistics of WebRTC media

Start at: Tue, 25 Jul 2017 06:45:59 +0000
End at: Tue, 25 Jul 2017 06:46:29 +0000
Local clock offset: 0.984 ms
Remote clock offset: -3.299 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:33:06 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 20.932 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 20.932 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

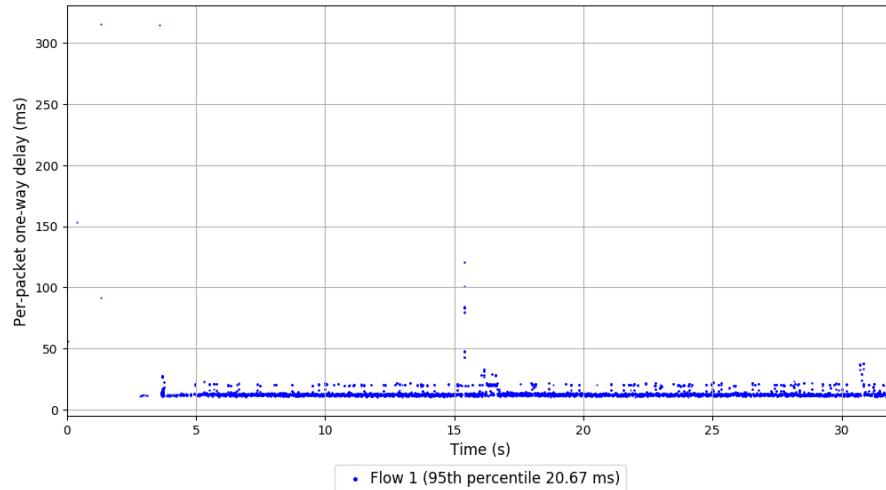
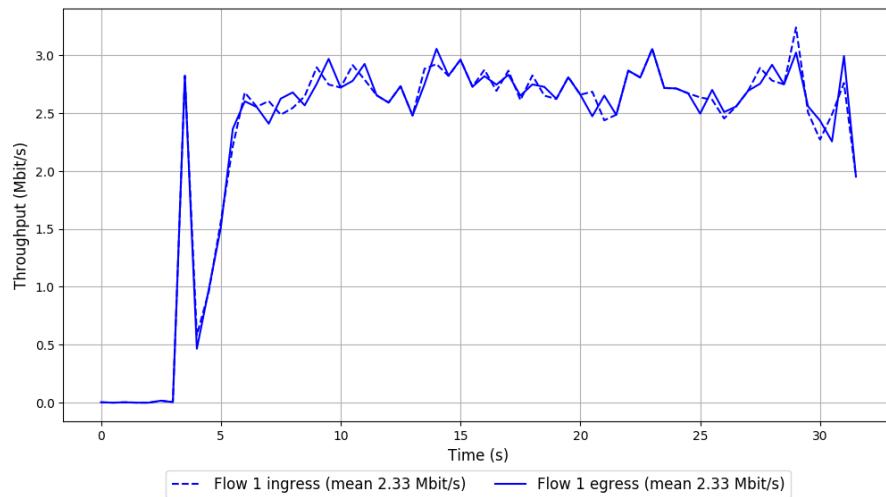


Run 2: Statistics of WebRTC media

```
Start at: Tue, 25 Jul 2017 07:03:46 +0000
End at: Tue, 25 Jul 2017 07:04:16 +0000
Local clock offset: 0.994 ms
Remote clock offset: -3.095 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:33:06 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 20.669 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 20.669 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link



```
Run 3: Statistics of WebRTC media
```

```
Start at: Tue, 25 Jul 2017 07:21:34 +0000
End at: Tue, 25 Jul 2017 07:22:04 +0000
Local clock offset: 1.013 ms
Remote clock offset: -2.803 ms

# Below is generated by plot.py at Tue, 25 Jul 2017 08:33:06 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 21.621 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 21.621 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

