

Pantheon Summary (Generated at Sun, 06 Aug 2017 09:17:18 +0000 with pantheon version a934ee3822380a12762347e6bc8bd1f3e836e73b)

Repeated the test of 15 congestion control schemes 3 times.

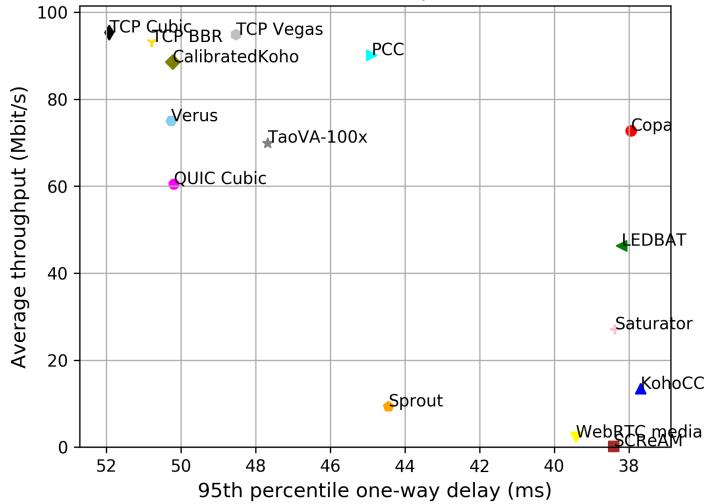
Each test lasted for 30 seconds running 1 flow.

Data path: Mexico Ethernet (*remote*) → AWS California 2 Ethernet (*local*).

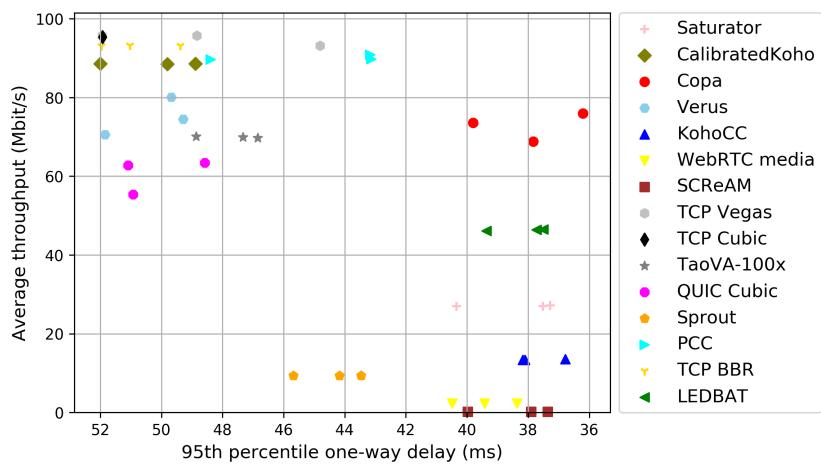
NTP offset measured against time.stanford.edu and has been applied to correct the timestamps in logs.

```
git branch: master @ a934ee3822380a12762347e6bc8bd1f3e836e73b
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 Mexico Ethernet to AWS California 2 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from Mexico Ethernet to AWS California 2 Ethernet, 3 runs of 30s each per scheme



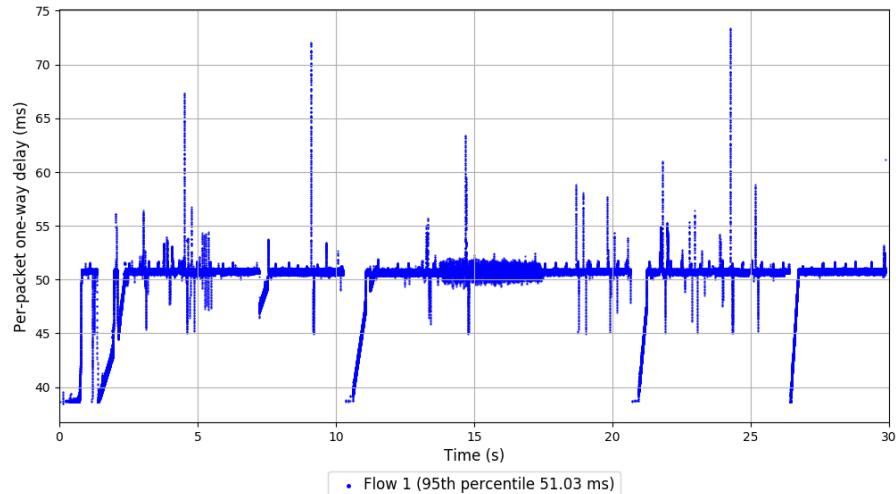
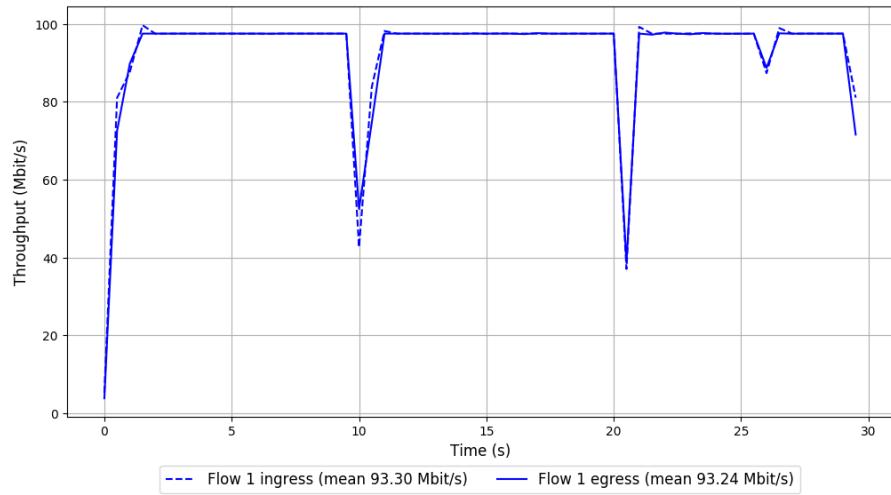
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	93.15	50.79	0.34
CalibratedKoho	3	88.57	50.23	0.33
Copa	3	72.79	37.95	0.27
TCP Cubic	3	95.38	51.93	0.34
KohoCC	3	13.47	37.69	0.30
LEDBAT	3	46.35	38.20	0.57
PCC	3	90.12	44.90	0.32
QUIC Cubic	3	60.53	50.20	0.39
Saturator	3	27.09	38.38	0.29
SCReAM	3	0.22	38.41	0.25
Sprout	3	9.37	44.44	0.30
TaoVA-100x	3	69.95	47.69	0.33
TCP Vegas	3	94.87	48.53	0.33
Verus	3	75.05	50.27	0.29
WebRTC media	3	2.27	39.43	0.39

Run 1: Statistics of TCP BBR

```
Start at: Sun, 06 Aug 2017 07:11:46 +0000
End at: Sun, 06 Aug 2017 07:12:16 +0000
Local clock offset: 0.737 ms
Remote clock offset: -3.648 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:14:20 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.24 Mbit/s
95th percentile per-packet one-way delay: 51.028 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 93.24 Mbit/s
95th percentile per-packet one-way delay: 51.028 ms
Loss rate: 0.35%
```

Run 1: Report of TCP BBR — Data Link

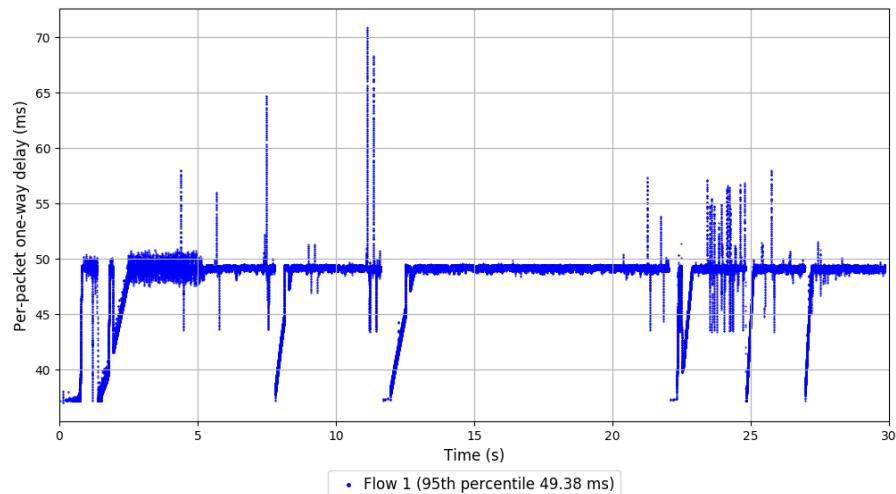
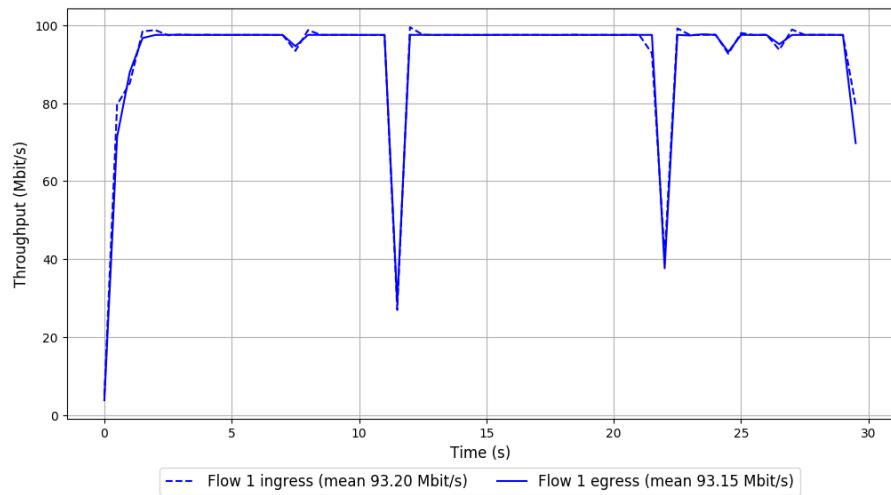


Run 2: Statistics of TCP BBR

```
Start at: Sun, 06 Aug 2017 07:31:59 +0000
End at: Sun, 06 Aug 2017 07:32:29 +0000
Local clock offset: 0.86 ms
Remote clock offset: -0.612 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:14:20 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.15 Mbit/s
95th percentile per-packet one-way delay: 49.383 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 93.15 Mbit/s
95th percentile per-packet one-way delay: 49.383 ms
Loss rate: 0.35%
```

Run 2: Report of TCP BBR — Data Link

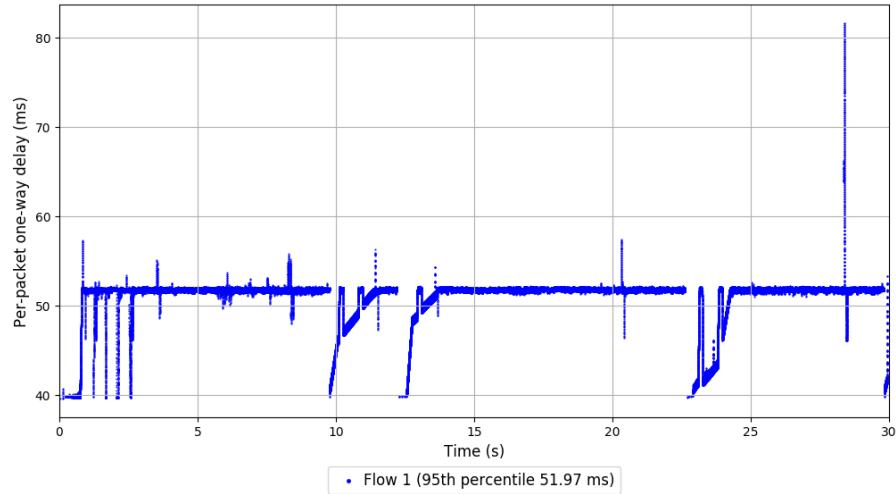
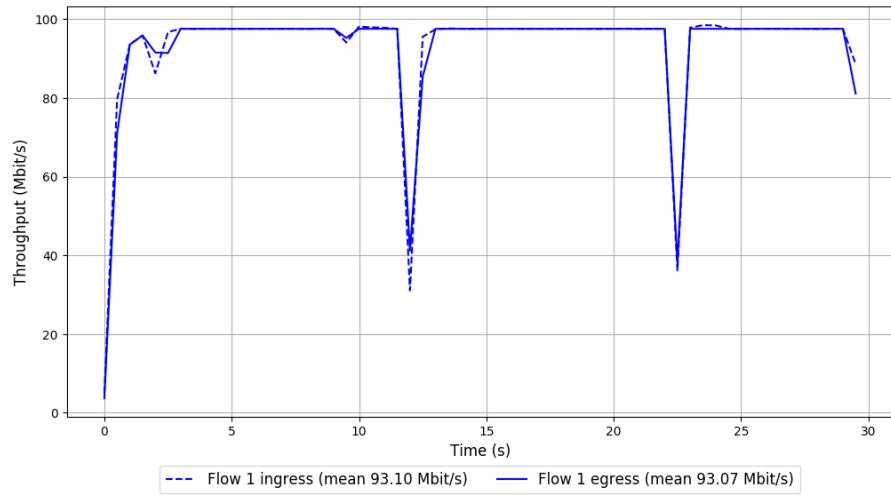


Run 3: Statistics of TCP BBR

```
Start at: Sun, 06 Aug 2017 07:52:07 +0000
End at: Sun, 06 Aug 2017 07:52:37 +0000
Local clock offset: 0.876 ms
Remote clock offset: -2.496 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:14:32 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.07 Mbit/s
95th percentile per-packet one-way delay: 51.968 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 93.07 Mbit/s
95th percentile per-packet one-way delay: 51.968 ms
Loss rate: 0.32%
```

Run 3: Report of TCP BBR — Data Link



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

```
Start at: Sun, 06 Aug 2017 07:13:09 +0000
```

```
End at: Sun, 06 Aug 2017 07:13:39 +0000
```

```
Local clock offset: 0.837 ms
```

```
Remote clock offset: -1.701 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:14:33 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 88.49 Mbit/s
```

```
95th percentile per-packet one-way delay: 49.809 ms
```

```
Loss rate: 0.34%
```

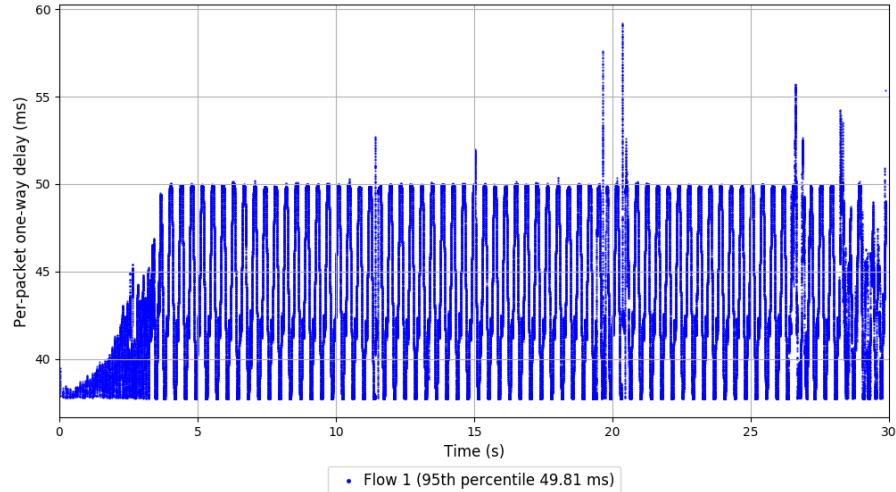
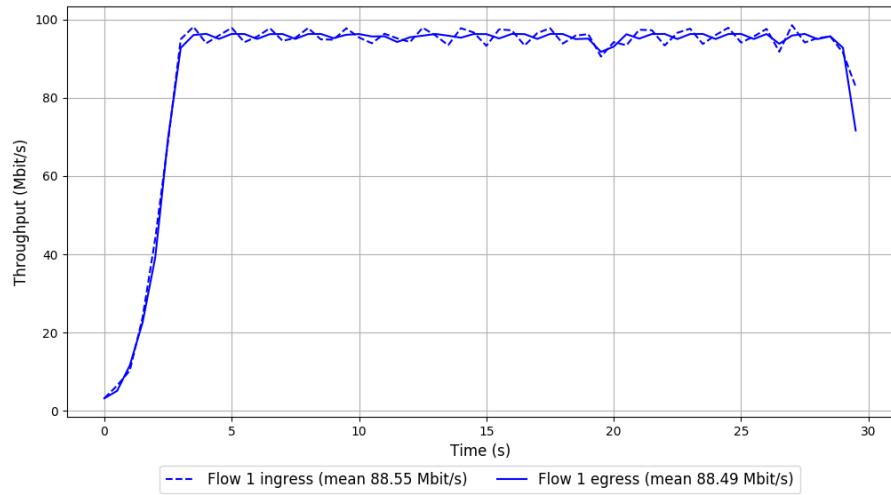
```
-- Flow 1:
```

```
Average throughput: 88.49 Mbit/s
```

```
95th percentile per-packet one-way delay: 49.809 ms
```

```
Loss rate: 0.34%
```

Run 1: Report of CalibratedKoho — Data Link



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

```
Start at: Sun, 06 Aug 2017 07:33:22 +0000
```

```
End at: Sun, 06 Aug 2017 07:33:52 +0000
```

```
Local clock offset: 0.956 ms
```

```
Remote clock offset: -3.132 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:14:44 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 88.59 Mbit/s
```

```
95th percentile per-packet one-way delay: 51.996 ms
```

```
Loss rate: 0.31%
```

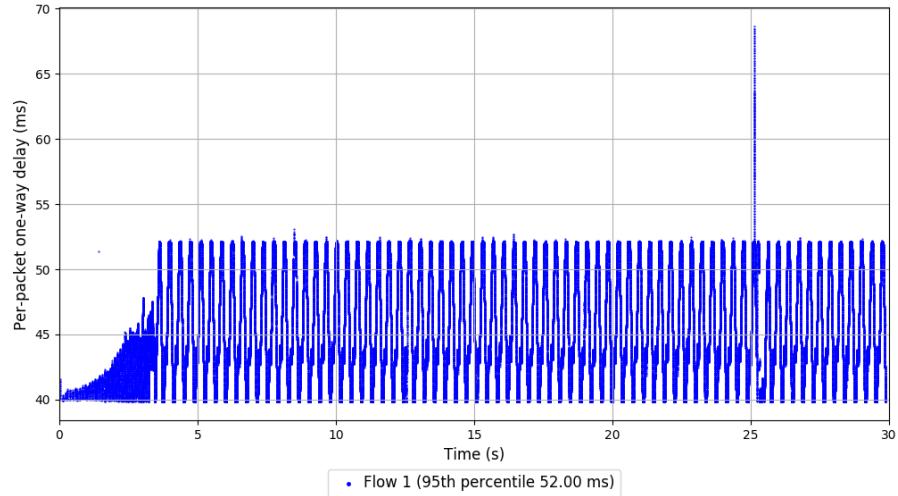
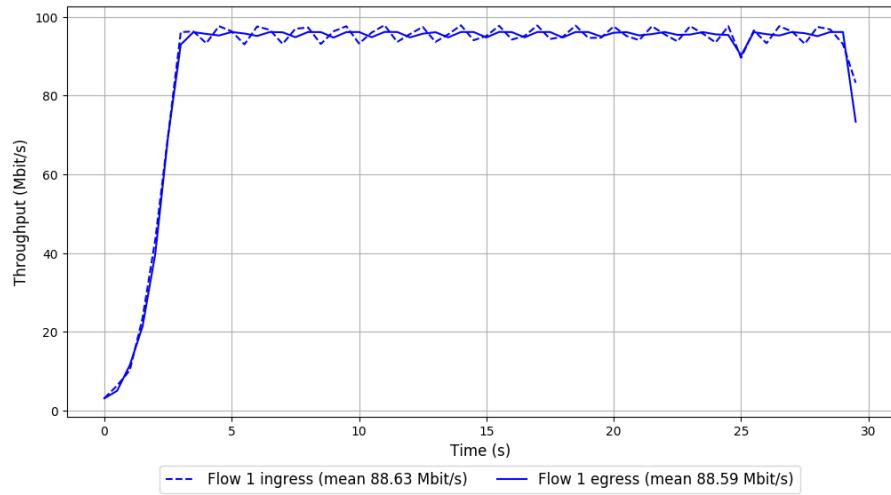
```
-- Flow 1:
```

```
Average throughput: 88.59 Mbit/s
```

```
95th percentile per-packet one-way delay: 51.996 ms
```

```
Loss rate: 0.31%
```

Run 2: Report of CalibratedKoho — Data Link

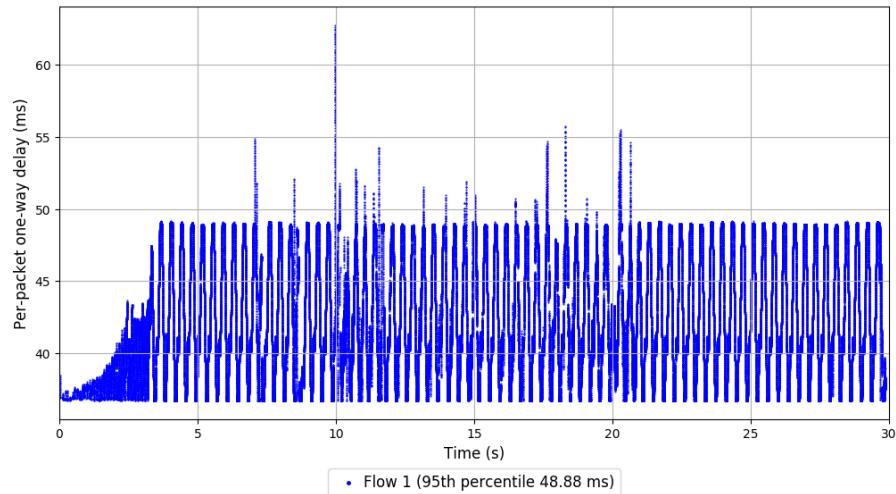
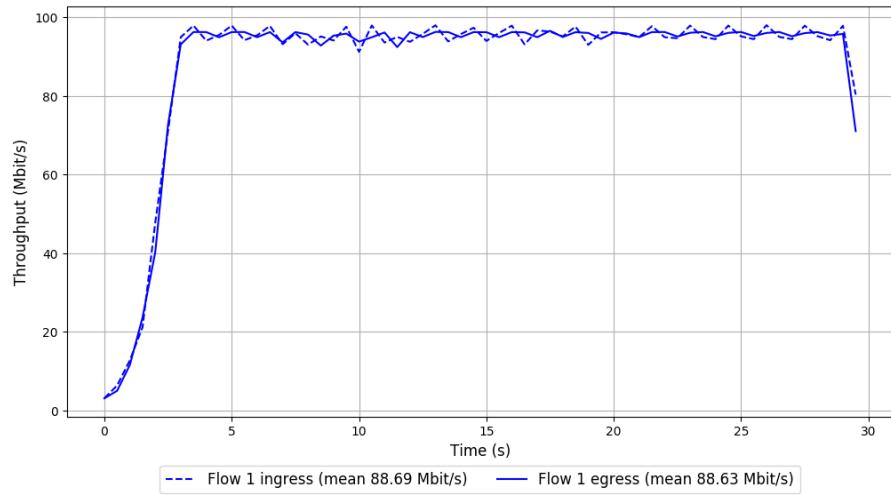


```
Run 3: Statistics of CalibratedKoho
```

```
Start at: Sun, 06 Aug 2017 07:53:29 +0000
End at: Sun, 06 Aug 2017 07:53:59 +0000
Local clock offset: 0.998 ms
Remote clock offset: -0.322 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:14:44 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.63 Mbit/s
95th percentile per-packet one-way delay: 48.885 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 88.63 Mbit/s
95th percentile per-packet one-way delay: 48.885 ms
Loss rate: 0.35%
```

Run 3: Report of CalibratedKoho — Data Link

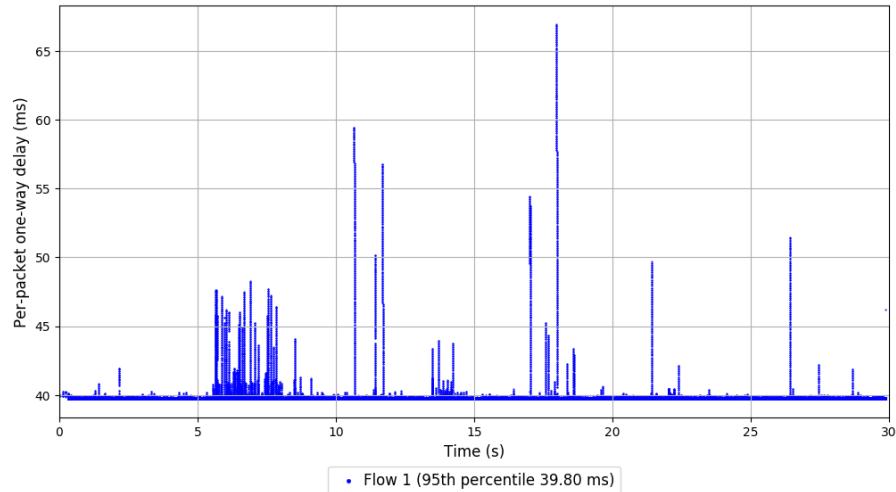
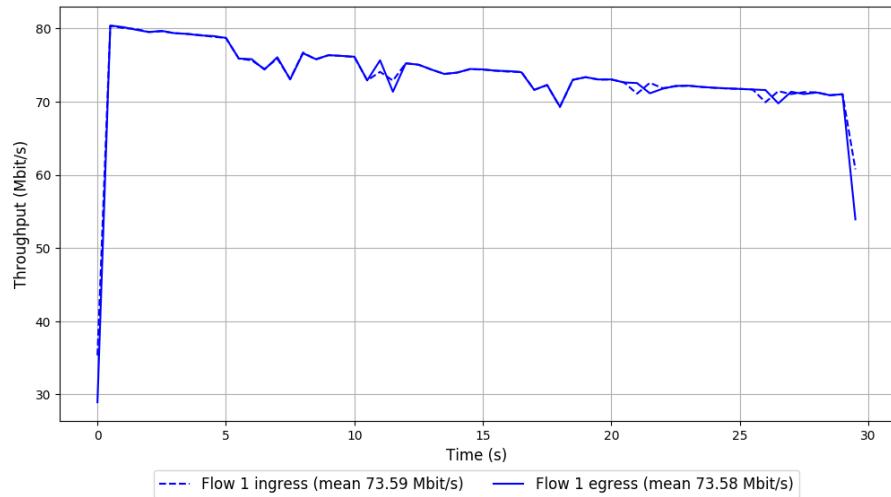


Run 1: Statistics of Copa

```
Start at: Sun, 06 Aug 2017 07:06:21 +0000
End at: Sun, 06 Aug 2017 07:06:51 +0000
Local clock offset: 0.706 ms
Remote clock offset: -3.897 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:02 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.58 Mbit/s
95th percentile per-packet one-way delay: 39.799 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 73.58 Mbit/s
95th percentile per-packet one-way delay: 39.799 ms
Loss rate: 0.28%
```

Run 1: Report of Copa — Data Link

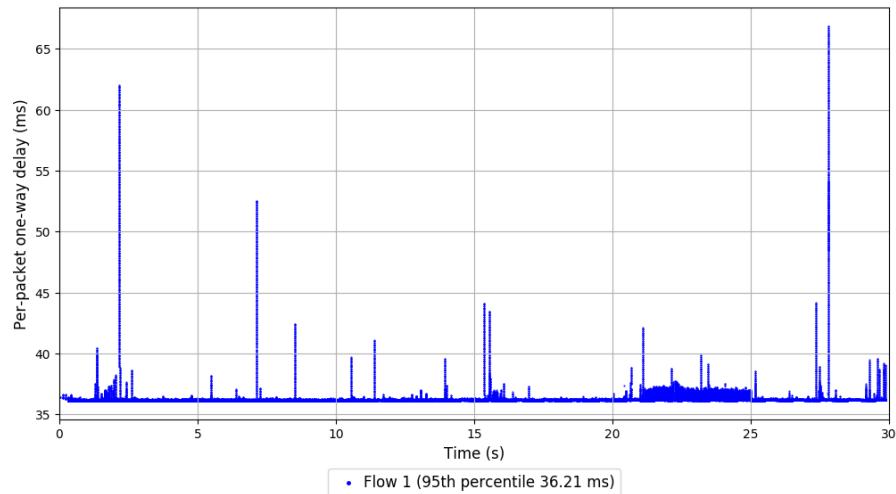
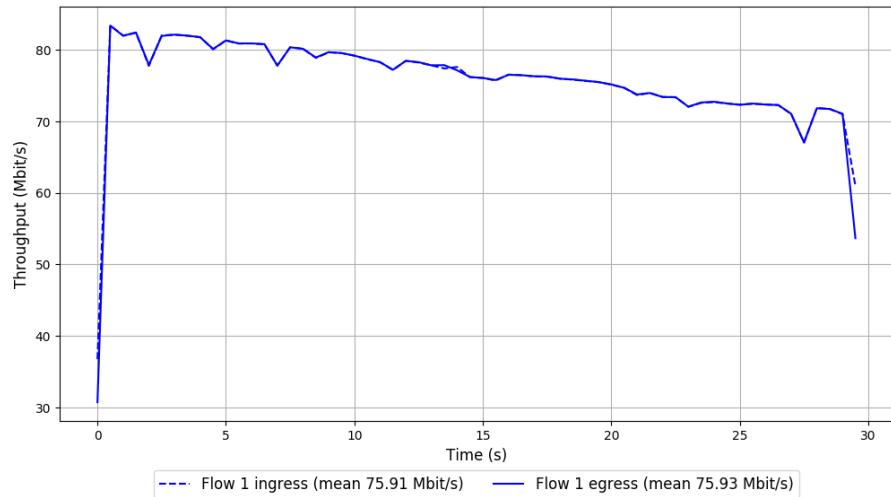


Run 2: Statistics of Copa

```
Start at: Sun, 06 Aug 2017 07:26:39 +0000
End at: Sun, 06 Aug 2017 07:27:09 +0000
Local clock offset: 0.857 ms
Remote clock offset: -0.64 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:03 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.93 Mbit/s
95th percentile per-packet one-way delay: 36.211 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 75.93 Mbit/s
95th percentile per-packet one-way delay: 36.211 ms
Loss rate: 0.27%
```

Run 2: Report of Copa — Data Link

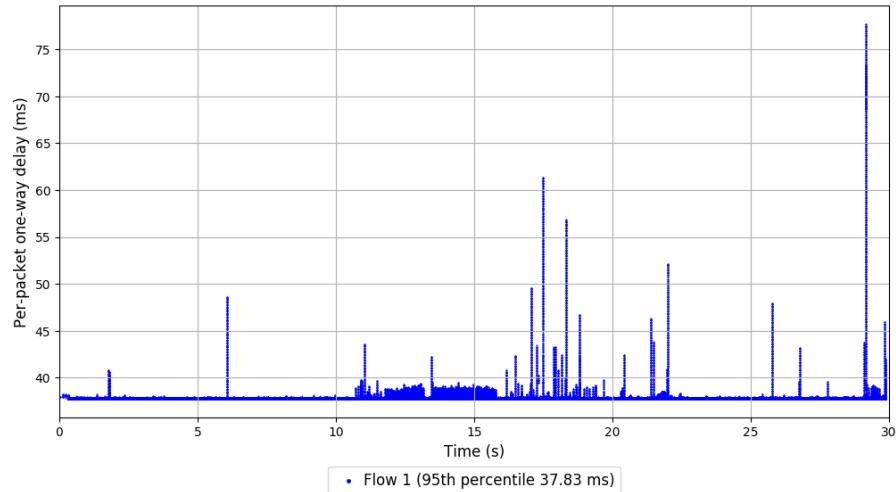
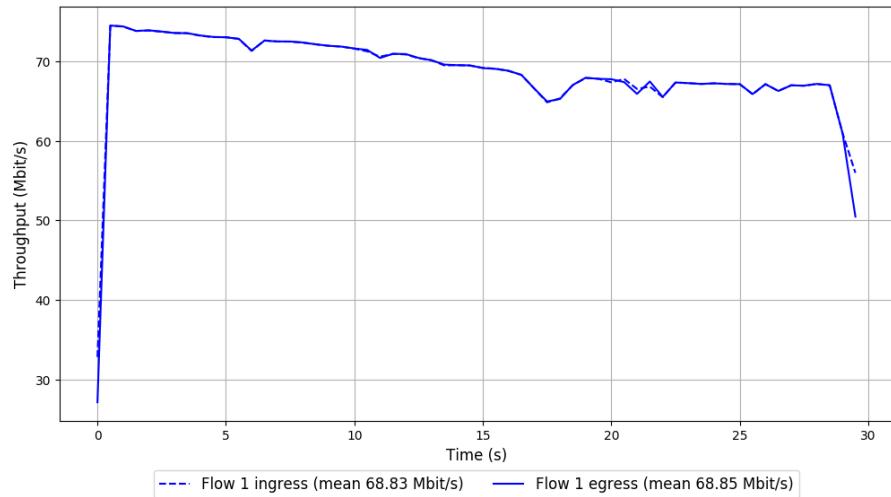


Run 3: Statistics of Copa

```
Start at: Sun, 06 Aug 2017 07:46:48 +0000
End at: Sun, 06 Aug 2017 07:47:18 +0000
Local clock offset: 0.962 ms
Remote clock offset: -0.604 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:19 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.85 Mbit/s
95th percentile per-packet one-way delay: 37.833 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 68.85 Mbit/s
95th percentile per-packet one-way delay: 37.833 ms
Loss rate: 0.26%
```

Run 3: Report of Copa — Data Link



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

```
Start at: Sun, 06 Aug 2017 07:10:24 +0000
```

```
End at: Sun, 06 Aug 2017 07:10:54 +0000
```

```
Local clock offset: 0.746 ms
```

```
Remote clock offset: -3.802 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:19 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 95.38 Mbit/s
```

```
95th percentile per-packet one-way delay: 51.927 ms
```

```
Loss rate: 0.34%
```

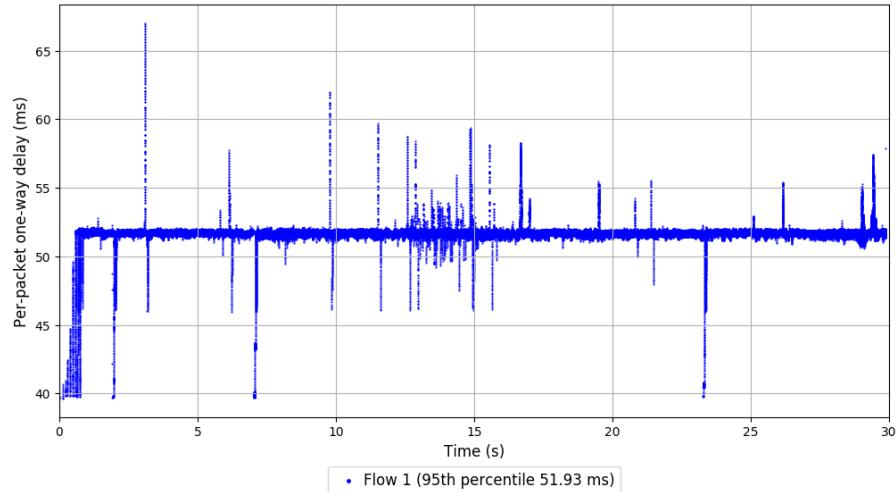
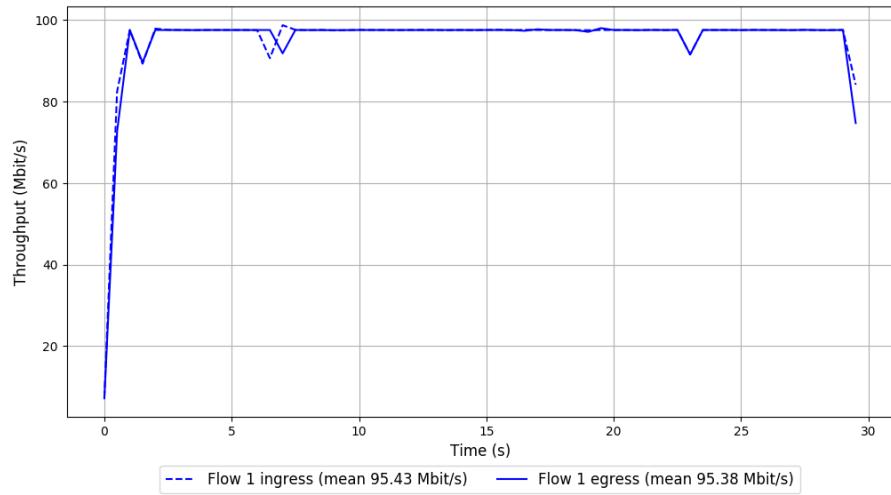
```
-- Flow 1:
```

```
Average throughput: 95.38 Mbit/s
```

```
95th percentile per-packet one-way delay: 51.927 ms
```

```
Loss rate: 0.34%
```

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: Sun, 06 Aug 2017 07:30:42 +0000
End at: Sun, 06 Aug 2017 07:31:12 +0000
Local clock offset: 0.839 ms
Remote clock offset: -3.104 ms

Run 2: Report of TCP Cubic — Data Link

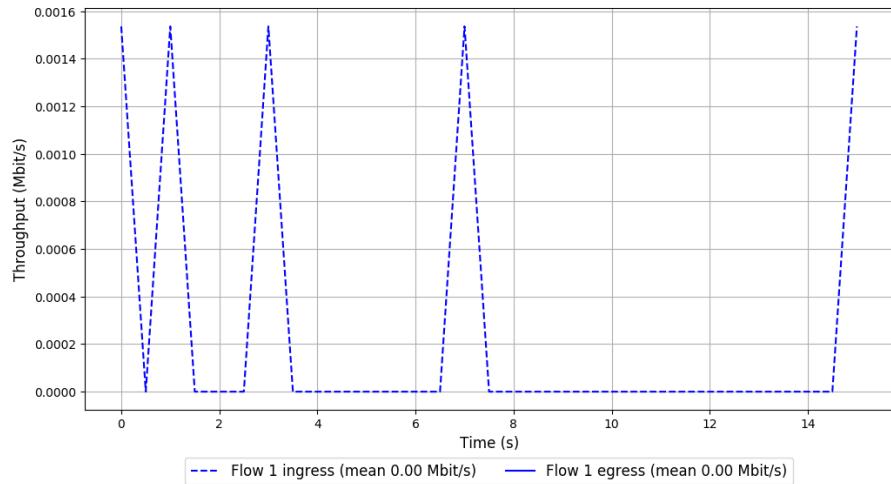
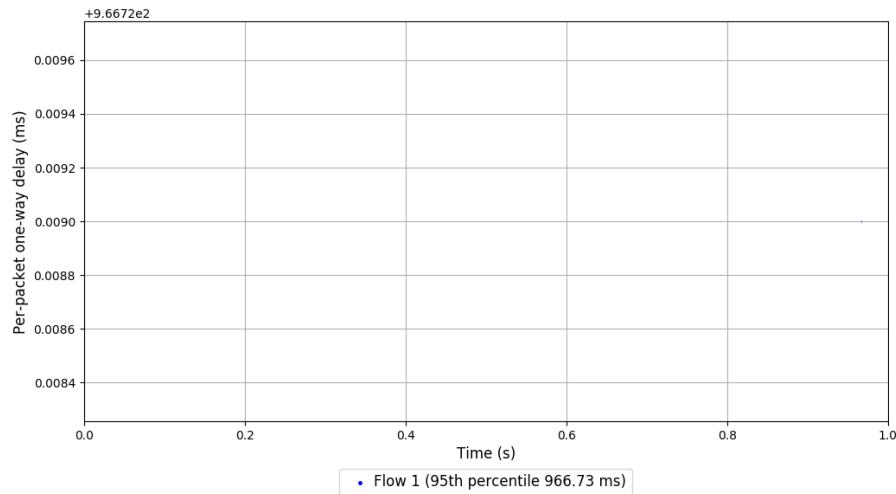
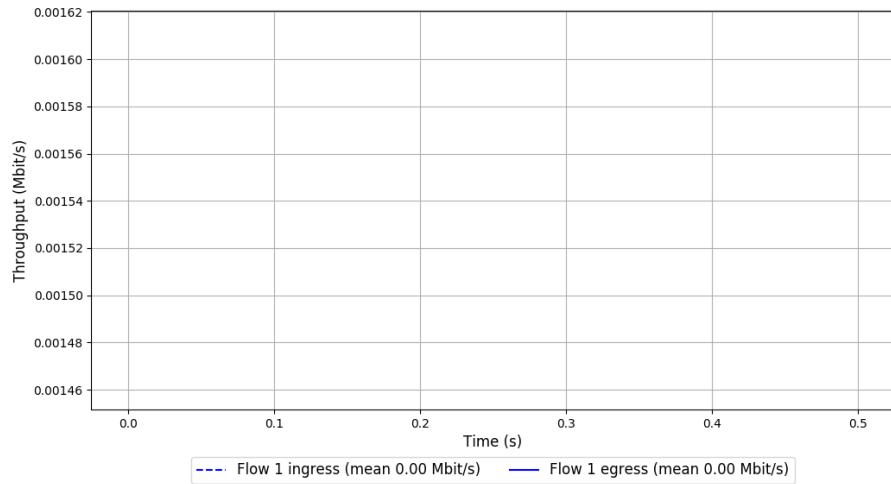


Figure is missing

Run 3: Statistics of TCP Cubic

Start at: Sun, 06 Aug 2017 07:50:50 +0000
End at: Sun, 06 Aug 2017 07:51:20 +0000
Local clock offset: 0.909 ms
Remote clock offset: -2.476 ms

Run 3: Report of TCP Cubic — Data Link



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

```
Start at: Sun, 06 Aug 2017 07:09:05 +0000
```

```
End at: Sun, 06 Aug 2017 07:09:35 +0000
```

```
Local clock offset: 0.794 ms
```

```
Remote clock offset: -1.773 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:20 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 13.41 Mbit/s
```

```
95th percentile per-packet one-way delay: 38.173 ms
```

```
Loss rate: 0.30%
```

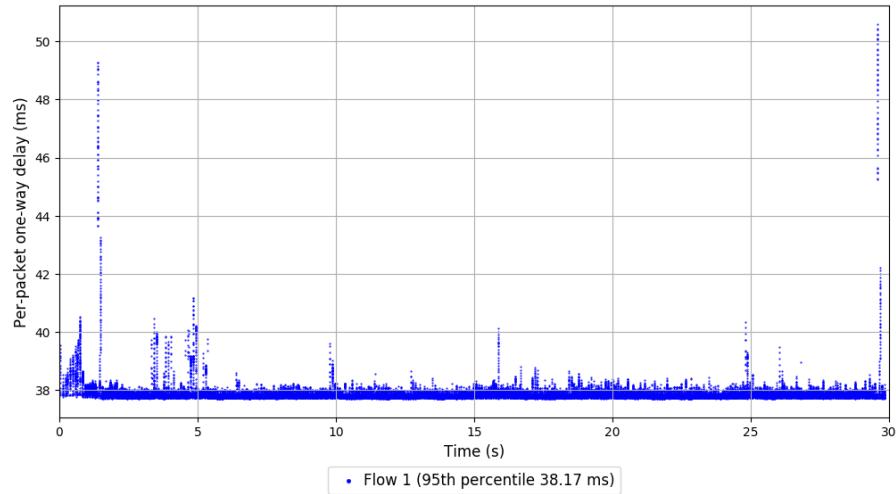
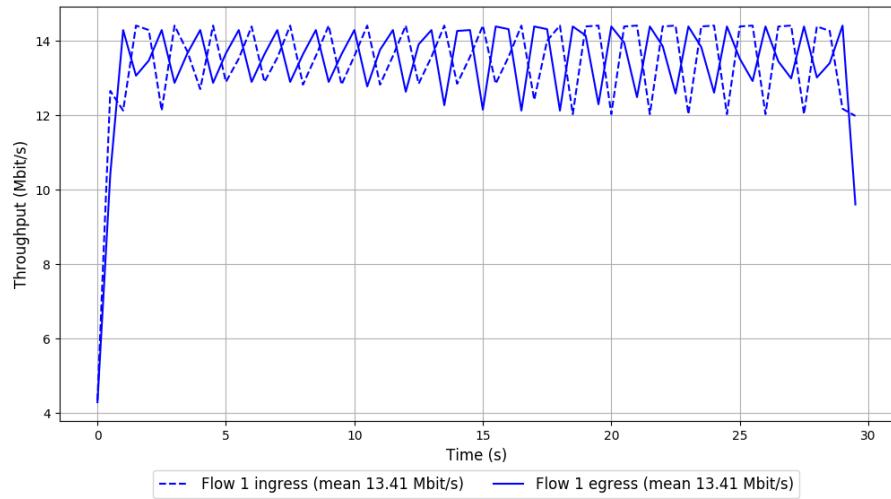
```
-- Flow 1:
```

```
Average throughput: 13.41 Mbit/s
```

```
95th percentile per-packet one-way delay: 38.173 ms
```

```
Loss rate: 0.30%
```

Run 1: Report of KohoCC — Data Link

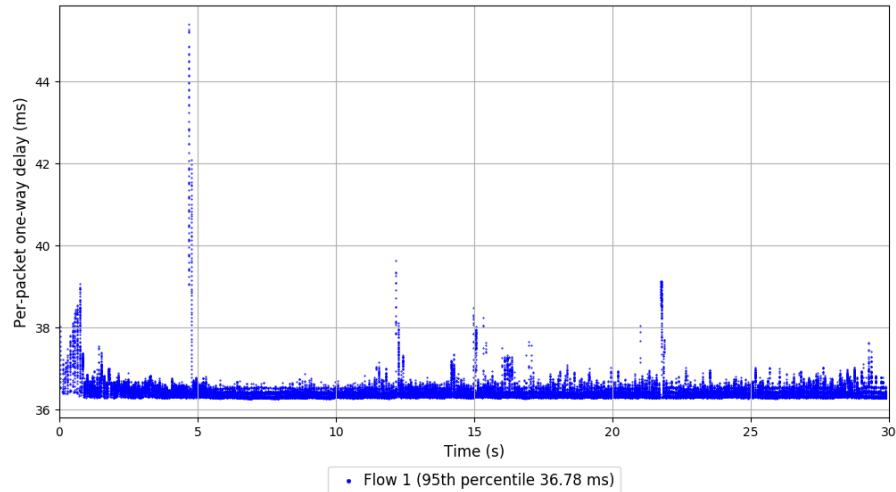
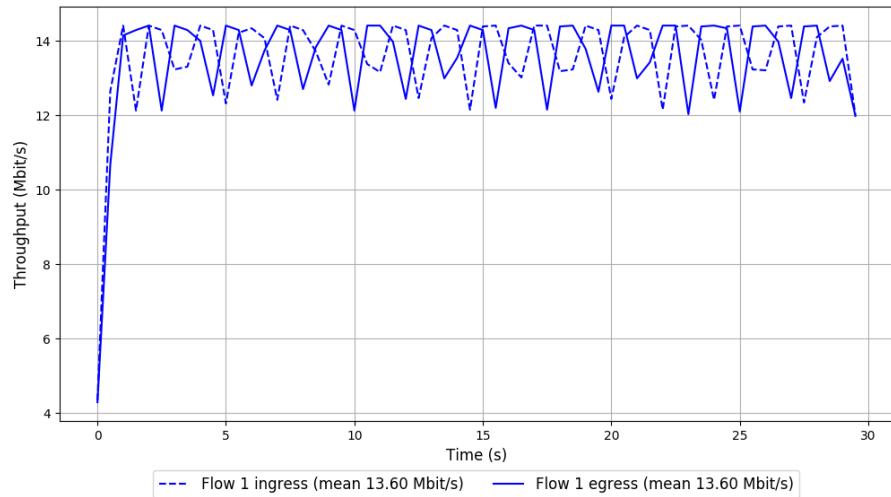


Run 2: Statistics of KohoCC

```
Start at: Sun, 06 Aug 2017 07:29:23 +0000
End at: Sun, 06 Aug 2017 07:29:53 +0000
Local clock offset: 0.971 ms
Remote clock offset: -0.586 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:21 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.60 Mbit/s
95th percentile per-packet one-way delay: 36.782 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 13.60 Mbit/s
95th percentile per-packet one-way delay: 36.782 ms
Loss rate: 0.29%
```

Run 2: Report of KohoCC — Data Link

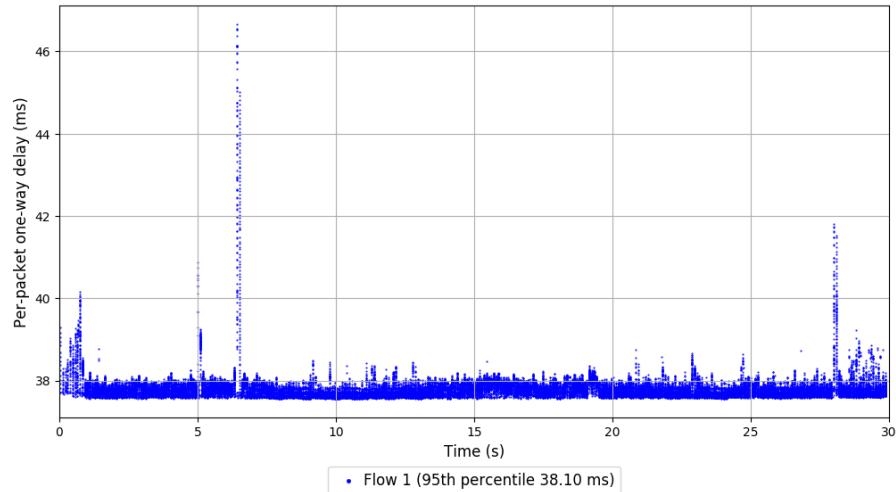
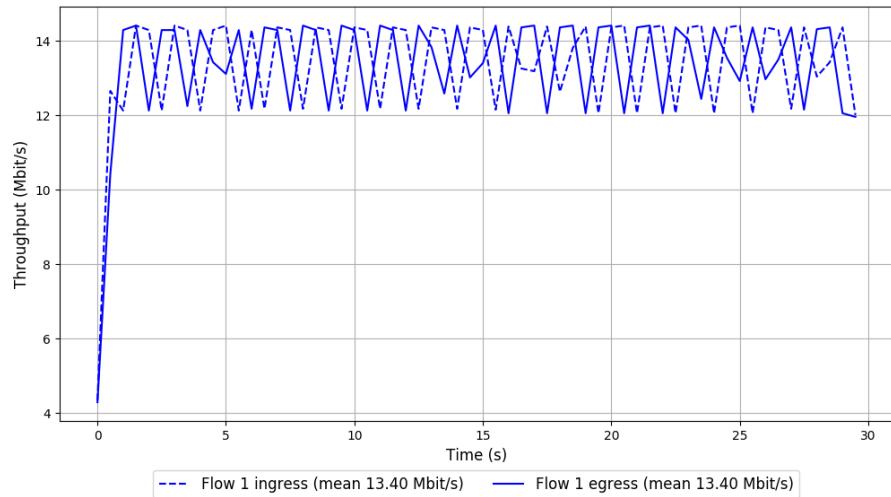


Run 3: Statistics of KohoCC

```
Start at: Sun, 06 Aug 2017 07:49:31 +0000
End at: Sun, 06 Aug 2017 07:50:01 +0000
Local clock offset: 0.897 ms
Remote clock offset: -0.403 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:22 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.40 Mbit/s
95th percentile per-packet one-way delay: 38.104 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 13.40 Mbit/s
95th percentile per-packet one-way delay: 38.104 ms
Loss rate: 0.30%
```

Run 3: Report of KohoCC — Data Link

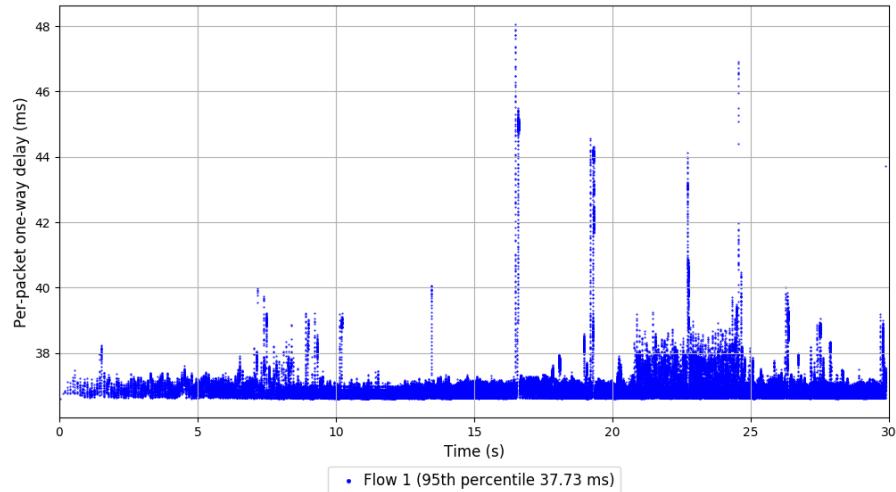
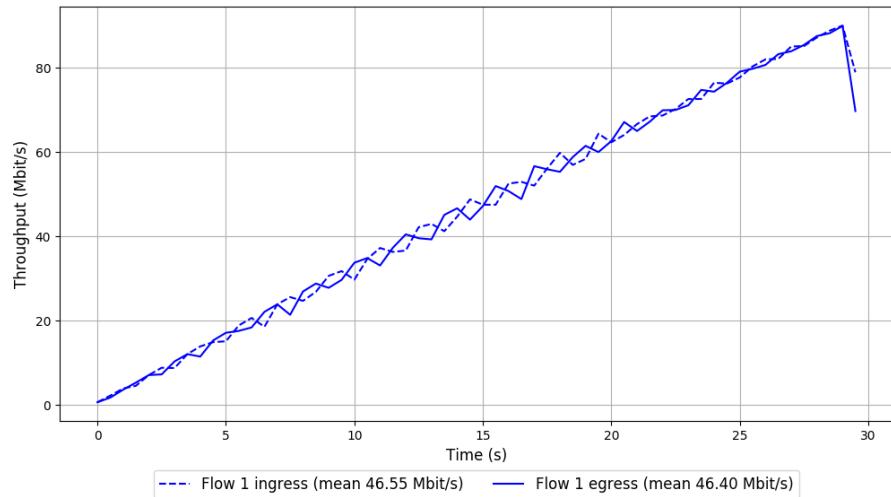


```
Run 1: Statistics of LEDBAT
```

```
Start at: Sun, 06 Aug 2017 07:22:39 +0000
End at: Sun, 06 Aug 2017 07:23:09 +0000
Local clock offset: 0.849 ms
Remote clock offset: -1.292 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:28 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.40 Mbit/s
95th percentile per-packet one-way delay: 37.729 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 46.40 Mbit/s
95th percentile per-packet one-way delay: 37.729 ms
Loss rate: 0.57%
```

Run 1: Report of LEDBAT — Data Link

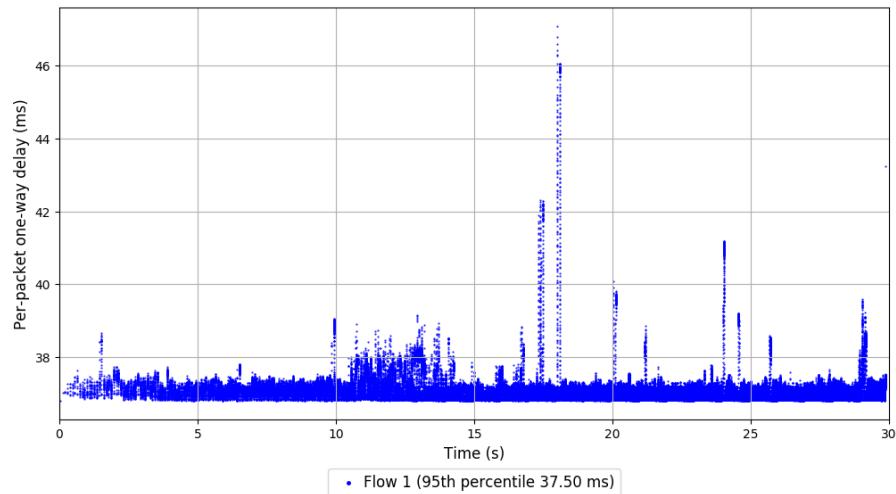
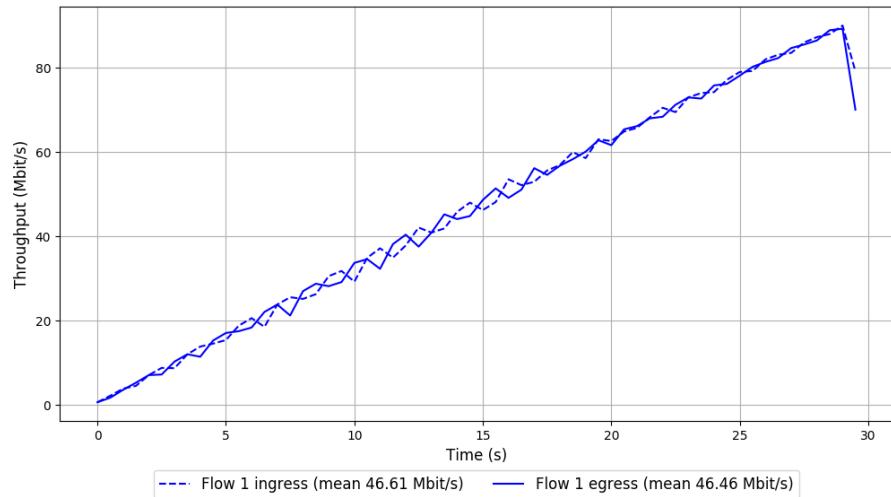


Run 2: Statistics of LEDBAT

```
Start at: Sun, 06 Aug 2017 07:42:50 +0000
End at: Sun, 06 Aug 2017 07:43:20 +0000
Local clock offset: 0.964 ms
Remote clock offset: -0.748 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:29 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.46 Mbit/s
95th percentile per-packet one-way delay: 37.504 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 46.46 Mbit/s
95th percentile per-packet one-way delay: 37.504 ms
Loss rate: 0.57%
```

Run 2: Report of LEDBAT — Data Link

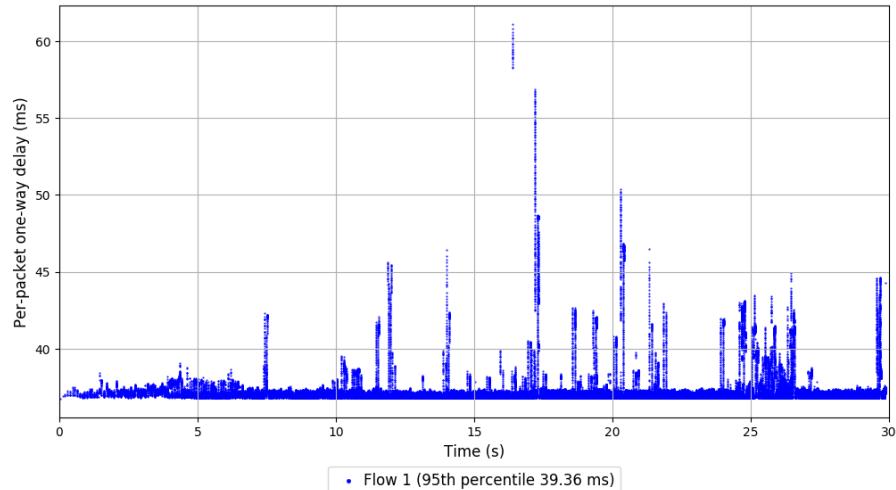
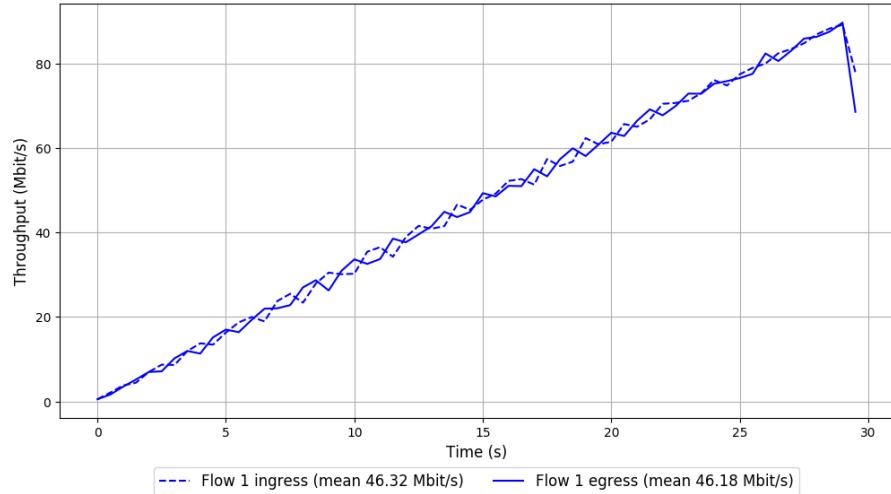


Run 3: Statistics of LEDBAT

```
Start at: Sun, 06 Aug 2017 08:02:56 +0000
End at: Sun, 06 Aug 2017 08:03:26 +0000
Local clock offset: 1.002 ms
Remote clock offset: -0.144 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:34 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.18 Mbit/s
95th percentile per-packet one-way delay: 39.364 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 46.18 Mbit/s
95th percentile per-packet one-way delay: 39.364 ms
Loss rate: 0.58%
```

Run 3: Report of LEDBAT — Data Link

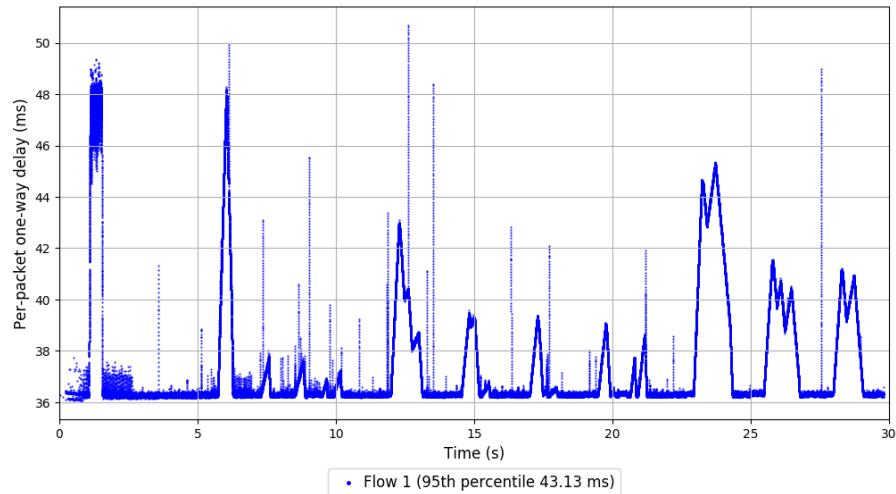
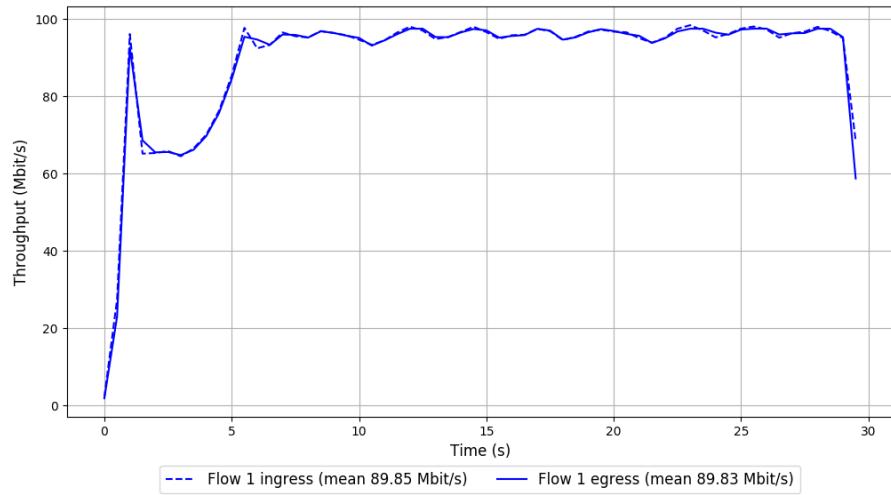


Run 1: Statistics of PCC

```
Start at: Sun, 06 Aug 2017 07:24:00 +0000
End at: Sun, 06 Aug 2017 07:24:30 +0000
Local clock offset: 0.839 ms
Remote clock offset: -0.881 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:40 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.83 Mbit/s
95th percentile per-packet one-way delay: 43.132 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 89.83 Mbit/s
95th percentile per-packet one-way delay: 43.132 ms
Loss rate: 0.31%
```

Run 1: Report of PCC — Data Link

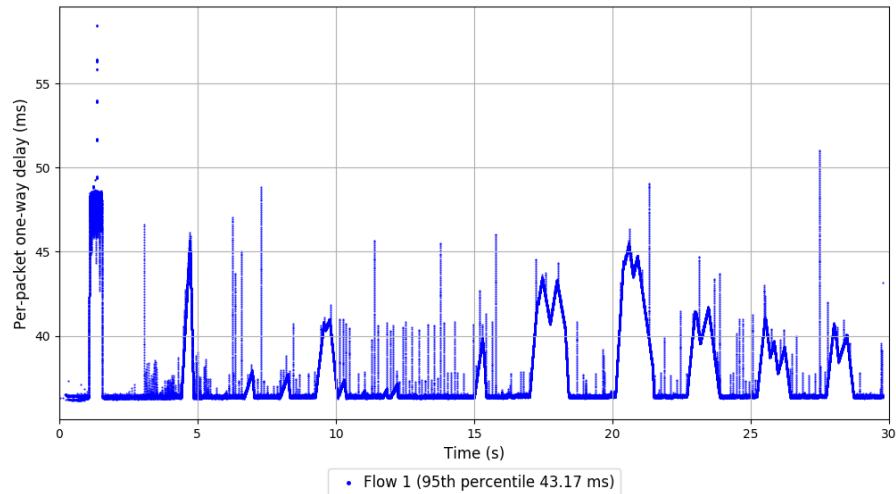
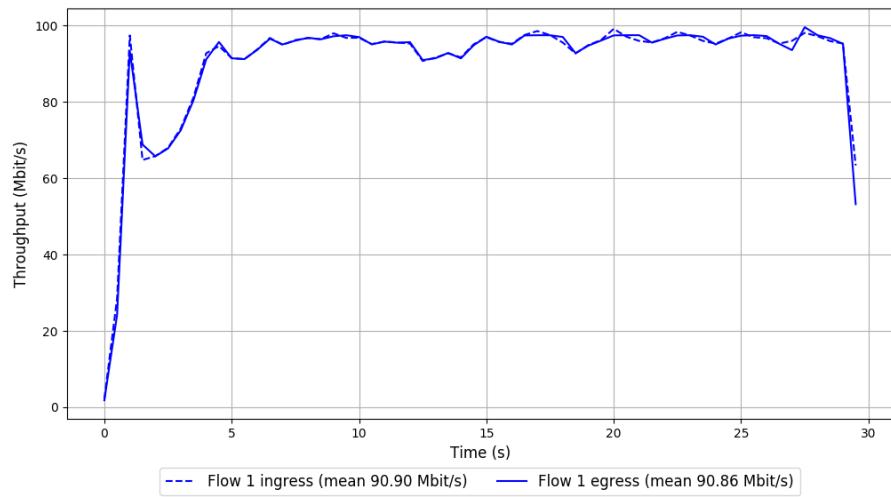


Run 2: Statistics of PCC

```
Start at: Sun, 06 Aug 2017 07:44:10 +0000
End at: Sun, 06 Aug 2017 07:44:40 +0000
Local clock offset: 0.991 ms
Remote clock offset: -0.275 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:46 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.86 Mbit/s
95th percentile per-packet one-way delay: 43.169 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 90.86 Mbit/s
95th percentile per-packet one-way delay: 43.169 ms
Loss rate: 0.32%
```

Run 2: Report of PCC — Data Link

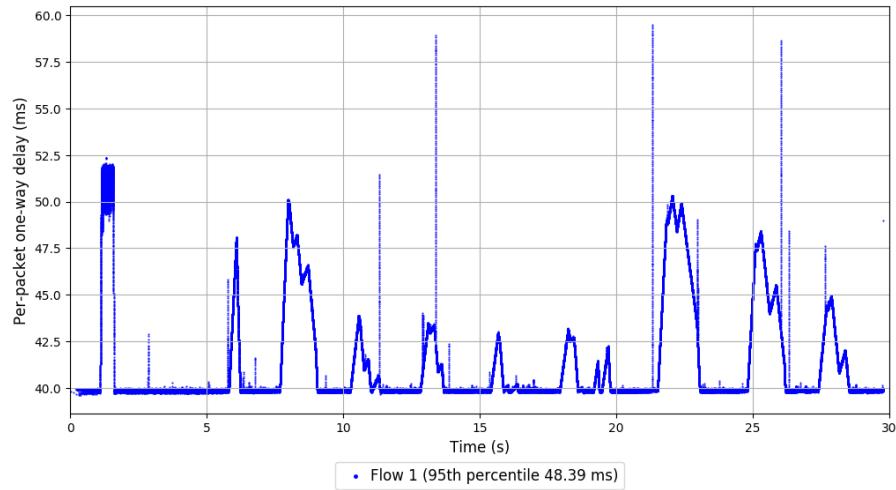
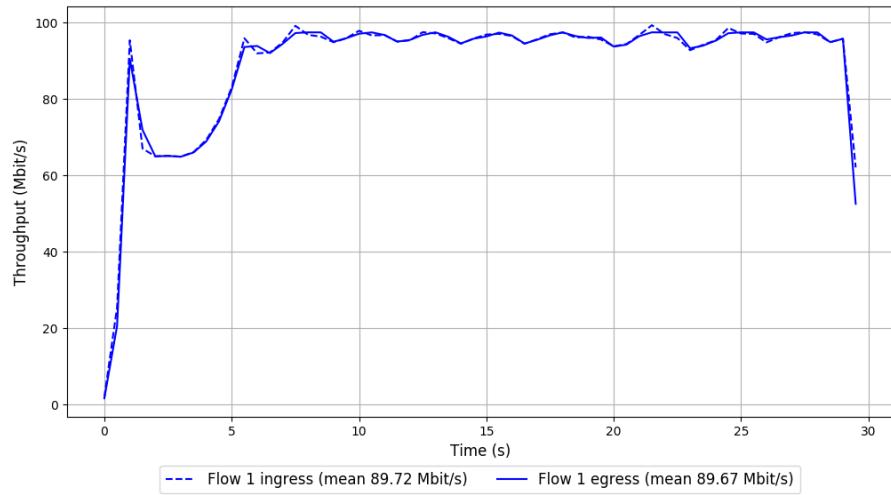


Run 3: Statistics of PCC

```
Start at: Sun, 06 Aug 2017 08:04:17 +0000
End at: Sun, 06 Aug 2017 08:04:47 +0000
Local clock offset: 0.978 ms
Remote clock offset: -2.183 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:52 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.67 Mbit/s
95th percentile per-packet one-way delay: 48.391 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 89.67 Mbit/s
95th percentile per-packet one-way delay: 48.391 ms
Loss rate: 0.32%
```

Run 3: Report of PCC — Data Link



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

```
Start at: Sun, 06 Aug 2017 07:19:56 +0000
```

```
End at: Sun, 06 Aug 2017 07:20:26 +0000
```

```
Local clock offset: 0.917 ms
```

```
Remote clock offset: -3.446 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:15:56 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 62.77 Mbit/s
```

```
95th percentile per-packet one-way delay: 51.091 ms
```

```
Loss rate: 0.39%
```

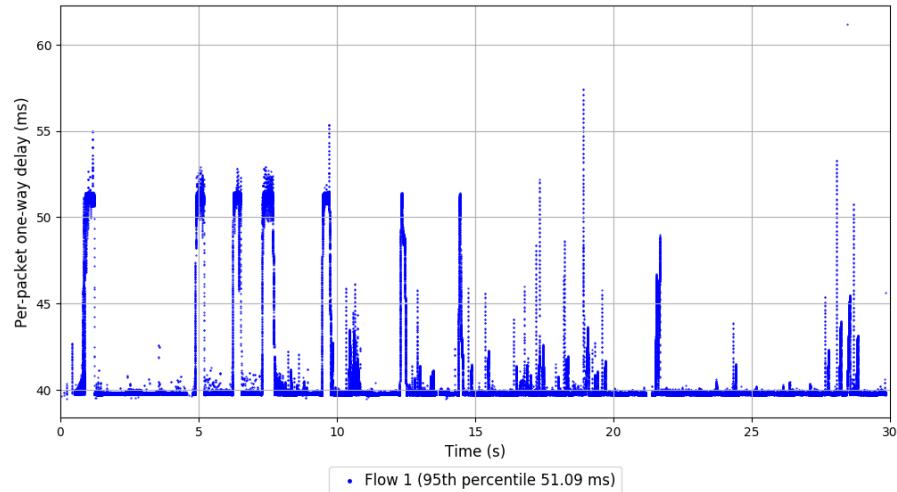
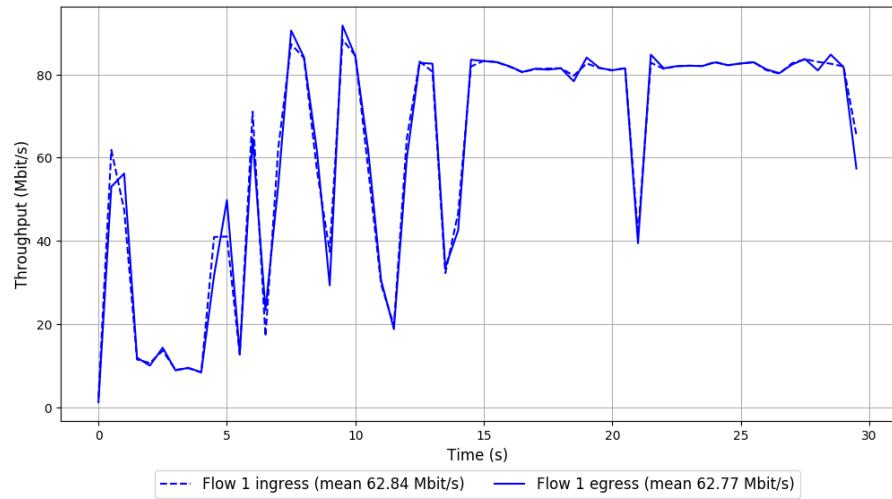
```
-- Flow 1:
```

```
Average throughput: 62.77 Mbit/s
```

```
95th percentile per-packet one-way delay: 51.091 ms
```

```
Loss rate: 0.39%
```

Run 1: Report of QUIC Cubic — Data Link

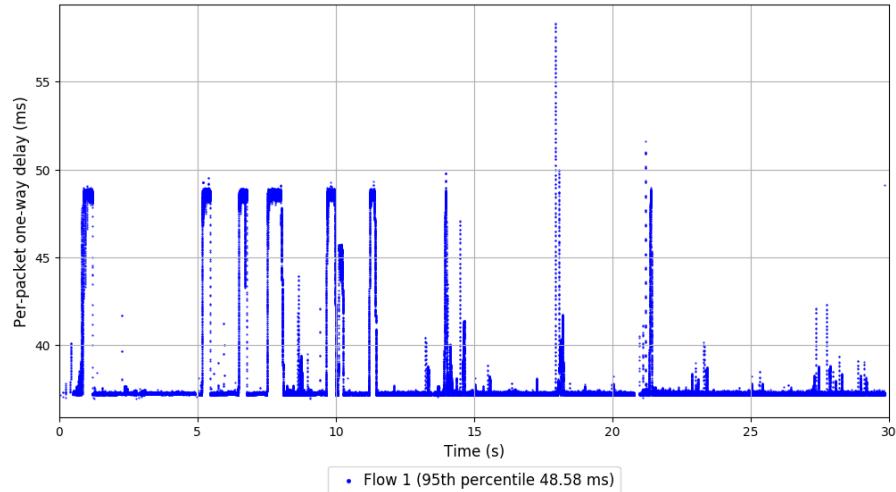
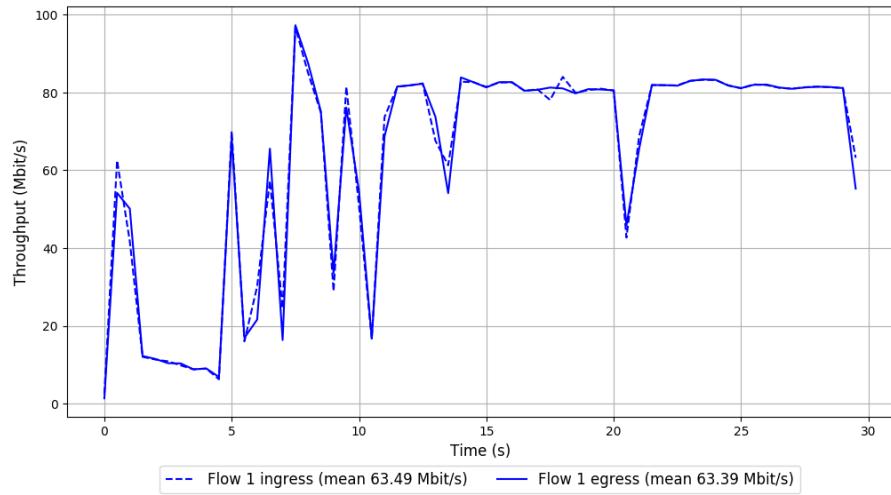


Run 2: Statistics of QUIC Cubic

```
Start at: Sun, 06 Aug 2017 07:40:06 +0000
End at: Sun, 06 Aug 2017 07:40:36 +0000
Local clock offset: 0.981 ms
Remote clock offset: -0.195 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:03 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.39 Mbit/s
95th percentile per-packet one-way delay: 48.581 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 63.39 Mbit/s
95th percentile per-packet one-way delay: 48.581 ms
Loss rate: 0.40%
```

Run 2: Report of QUIC Cubic — Data Link

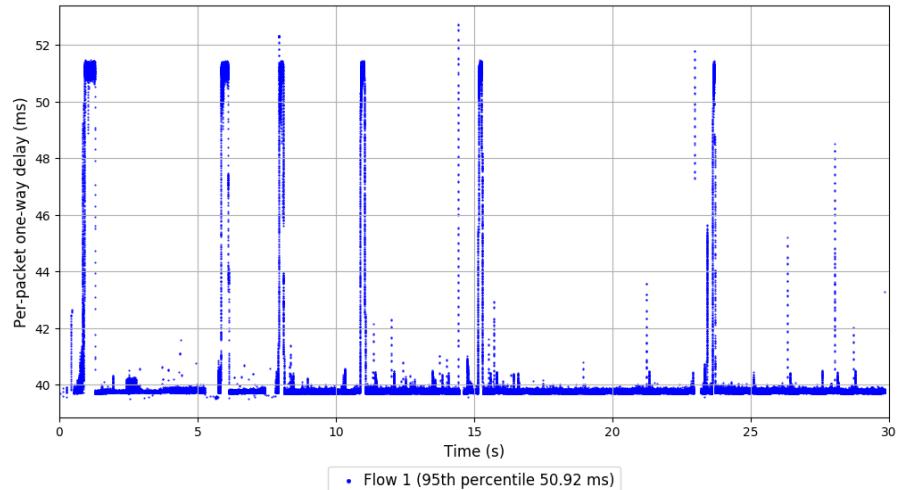
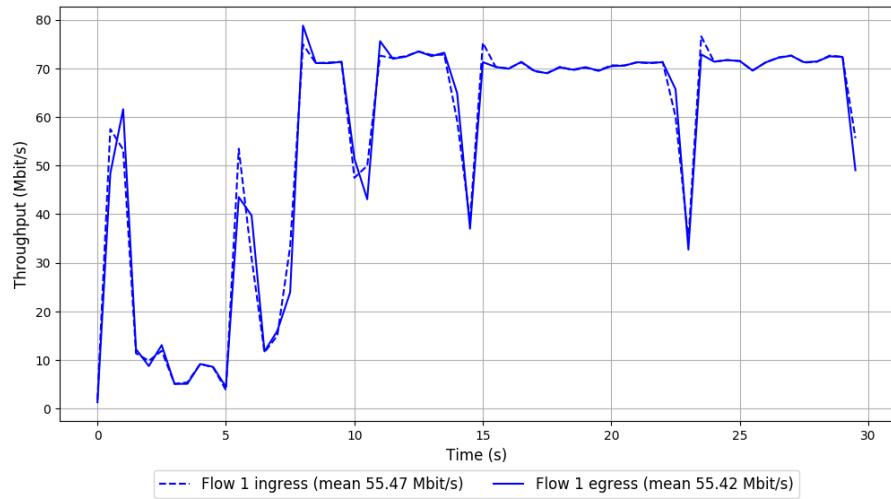


Run 3: Statistics of QUIC Cubic

```
Start at: Sun, 06 Aug 2017 08:00:14 +0000
End at: Sun, 06 Aug 2017 08:00:44 +0000
Local clock offset: 0.989 ms
Remote clock offset: -2.213 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:04 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.42 Mbit/s
95th percentile per-packet one-way delay: 50.921 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 55.42 Mbit/s
95th percentile per-packet one-way delay: 50.921 ms
Loss rate: 0.37%
```

Run 3: Report of QUIC Cubic — Data Link



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

```
Start at: Sun, 06 Aug 2017 07:07:46 +0000
```

```
End at: Sun, 06 Aug 2017 07:08:16 +0000
```

```
Local clock offset: 0.786 ms
```

```
Remote clock offset: -3.848 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:06 +0000
```

```
# Datalink statistics
```

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

```
Average throughput: 27.02 Mbit/s
```

```
95th percentile per-packet one-way delay: 40.346 ms
```

```
Loss rate: 0.29%
```

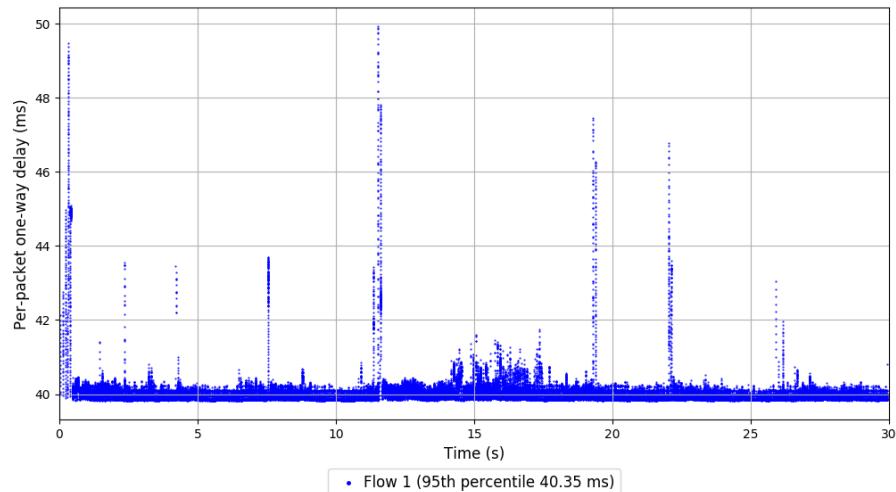
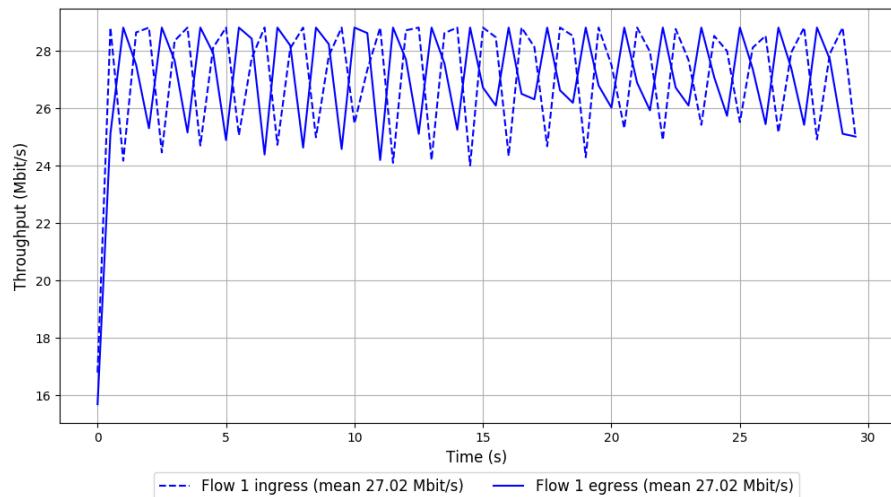
```
-- Flow 1:
```

```
Average throughput: 27.02 Mbit/s
```

```
95th percentile per-packet one-way delay: 40.346 ms
```

```
Loss rate: 0.29%
```

Run 1: Report of Saturator — Data Link

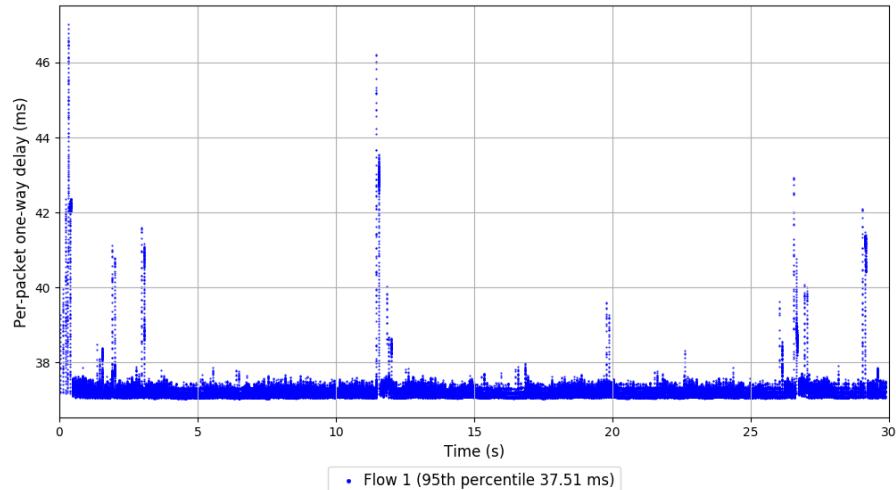
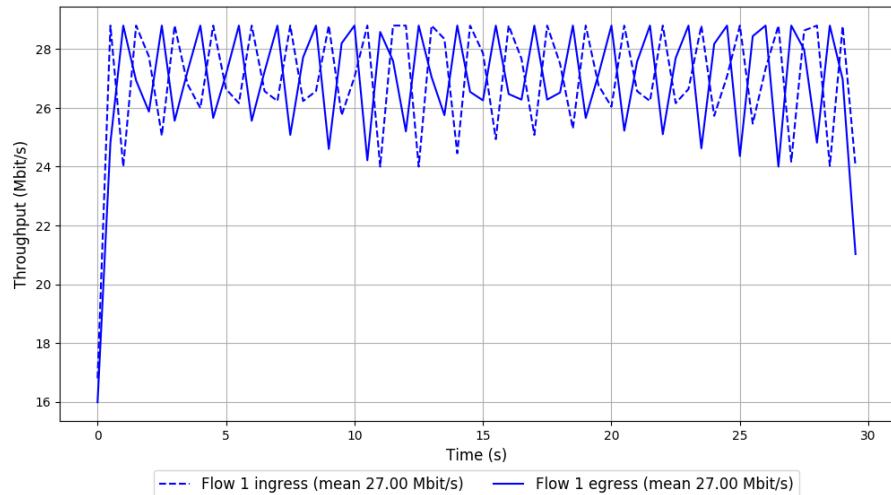


Run 2: Statistics of Saturator

```
Start at: Sun, 06 Aug 2017 07:28:04 +0000
End at: Sun, 06 Aug 2017 07:28:34 +0000
Local clock offset: 0.851 ms
Remote clock offset: -0.56 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:08 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 27.00 Mbit/s
95th percentile per-packet one-way delay: 37.512 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 27.00 Mbit/s
95th percentile per-packet one-way delay: 37.512 ms
Loss rate: 0.30%
```

Run 2: Report of Saturator — Data Link

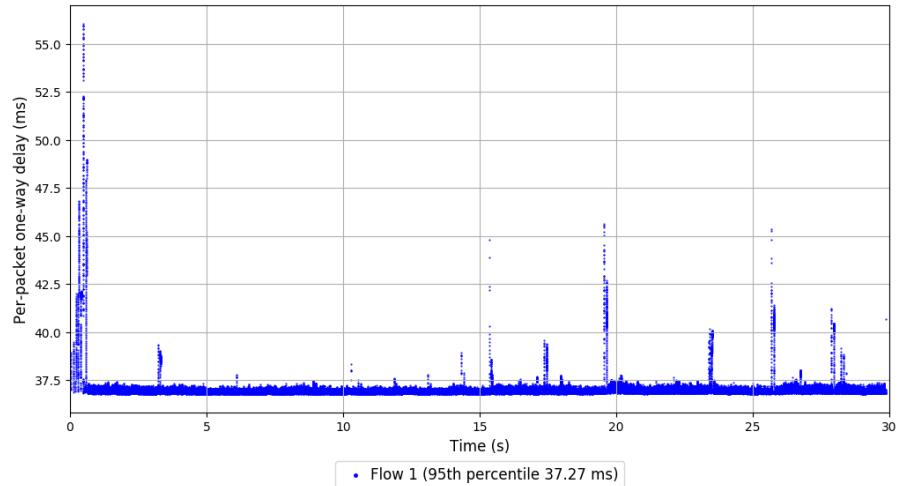
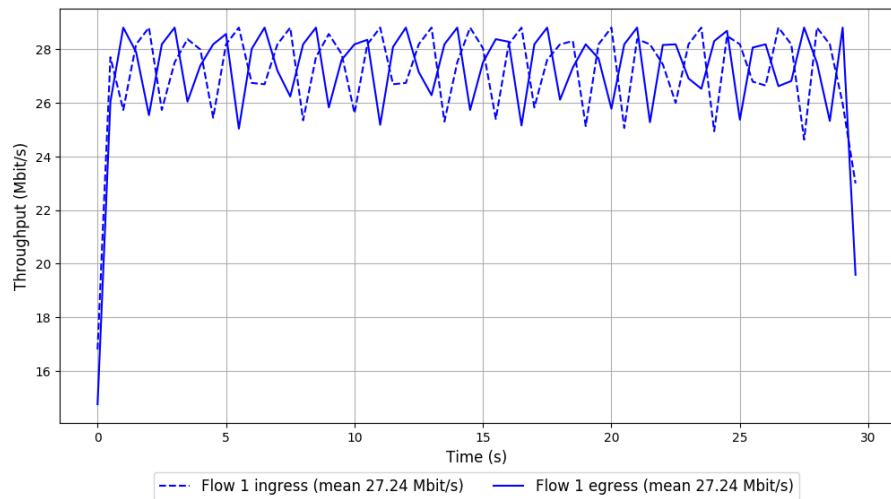


Run 3: Statistics of Saturator

```
Start at: Sun, 06 Aug 2017 07:48:12 +0000
End at: Sun, 06 Aug 2017 07:48:42 +0000
Local clock offset: 0.986 ms
Remote clock offset: -0.543 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:12 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 27.24 Mbit/s
95th percentile per-packet one-way delay: 37.275 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 27.24 Mbit/s
95th percentile per-packet one-way delay: 37.275 ms
Loss rate: 0.29%
```

Run 3: Report of Saturator — Data Link



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

```
Start at: Sun, 06 Aug 2017 07:15:56 +0000
```

```
End at: Sun, 06 Aug 2017 07:16:26 +0000
```

```
Local clock offset: 0.78 ms
```

```
Remote clock offset: -1.137 ms
```

```
# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:12 +0000
```

```
# Datalink statistics
```

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

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

```
95th percentile per-packet one-way delay: 37.360 ms
```

```
Loss rate: 0.25%
```

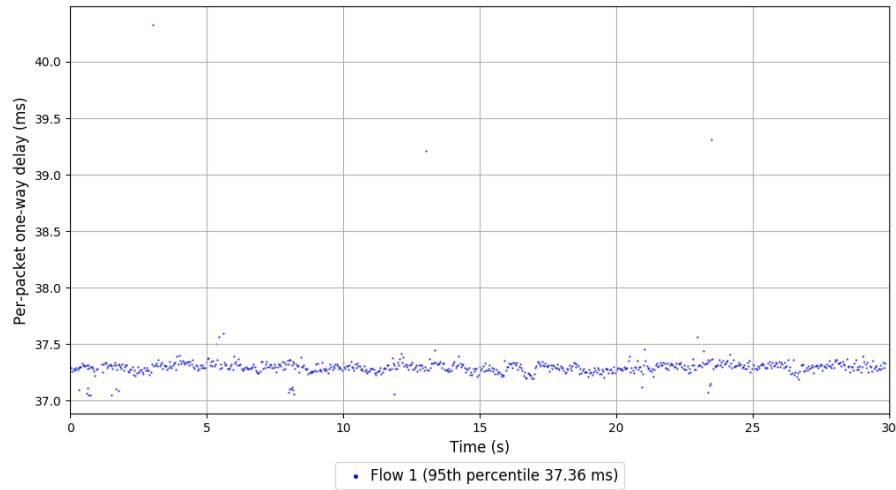
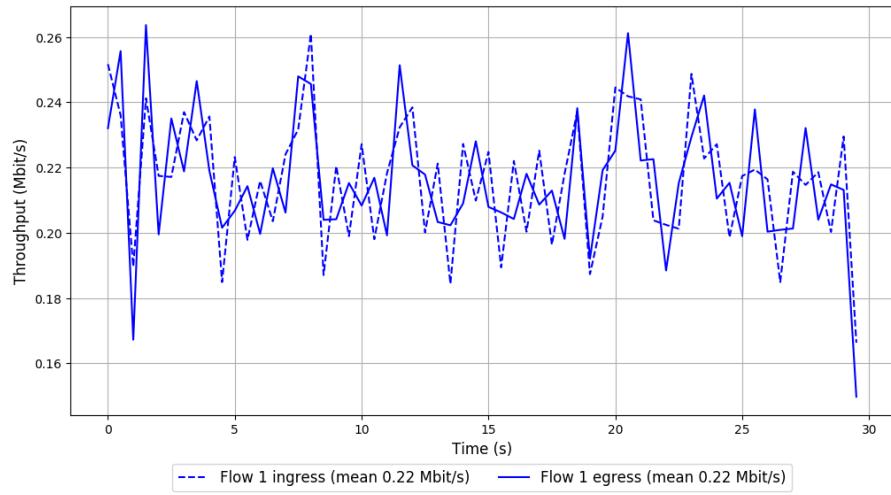
```
-- Flow 1:
```

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

```
95th percentile per-packet one-way delay: 37.360 ms
```

```
Loss rate: 0.25%
```

Run 1: Report of SCReAM — Data Link

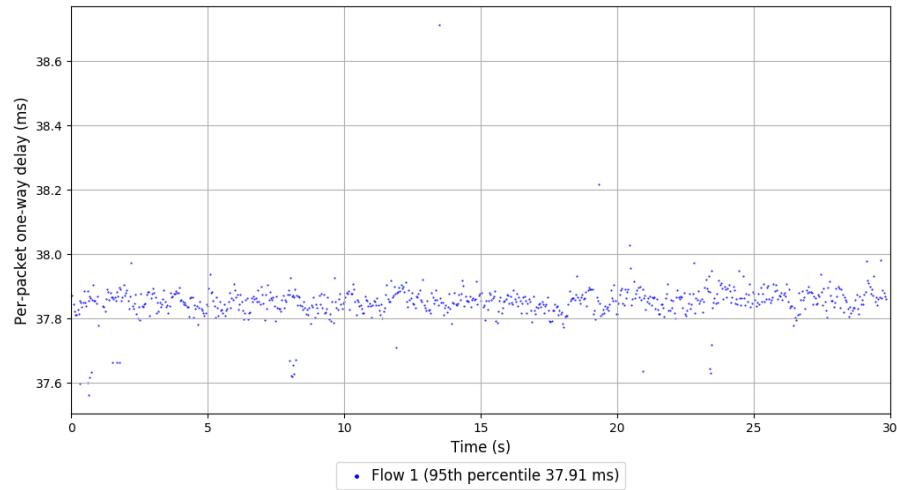
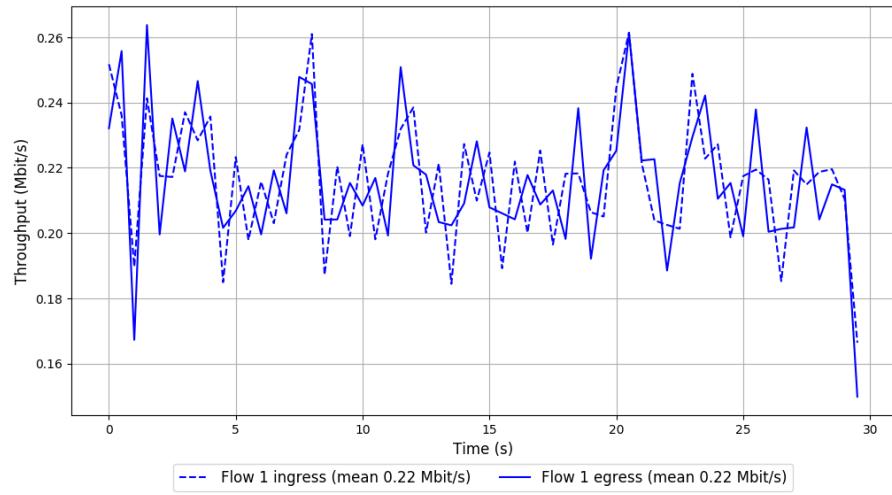


Run 2: Statistics of SCReAM

```
Start at: Sun, 06 Aug 2017 07:36:08 +0000
End at: Sun, 06 Aug 2017 07:36:38 +0000
Local clock offset: 0.976 ms
Remote clock offset: -0.879 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:12 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 37.905 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 37.905 ms
Loss rate: 0.25%
```

Run 2: Report of SCReAM — Data Link

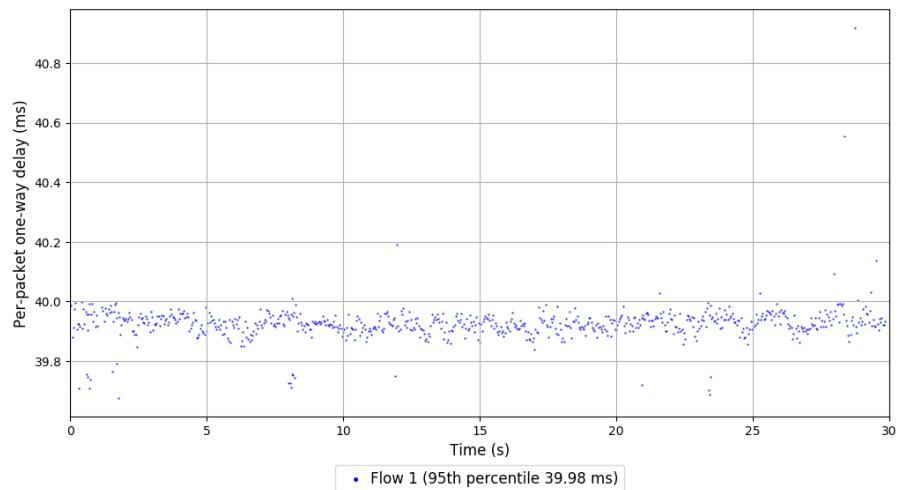
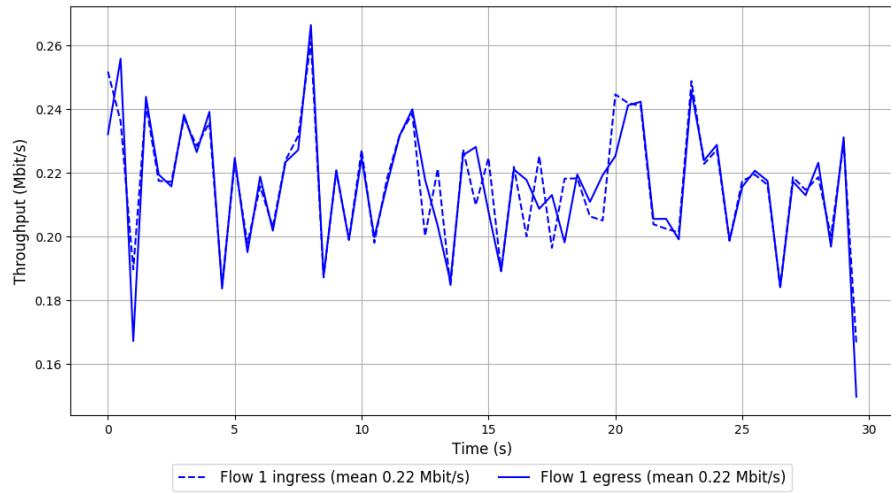


Run 3: Statistics of SCReAM

```
Start at: Sun, 06 Aug 2017 07:56:15 +0000
End at: Sun, 06 Aug 2017 07:56:45 +0000
Local clock offset: 1.005 ms
Remote clock offset: -2.33 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:12 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 39.977 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 39.977 ms
Loss rate: 0.25%
```

Run 3: Report of SCReAM — Data Link

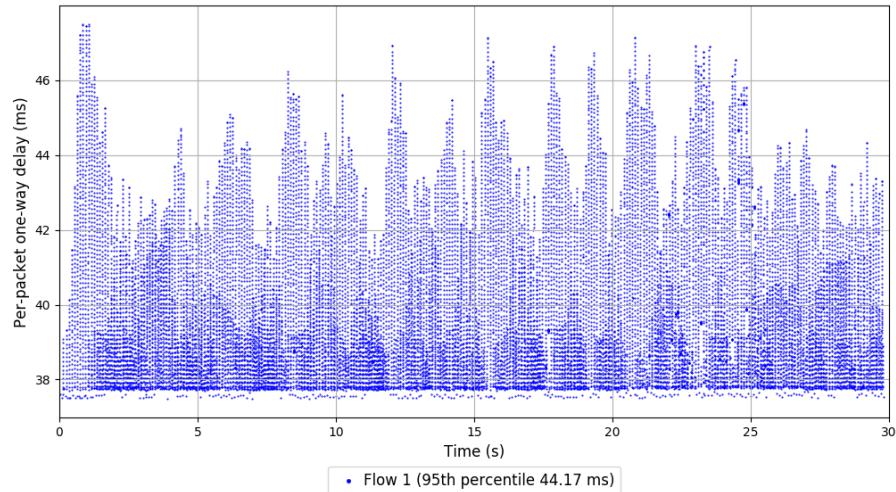
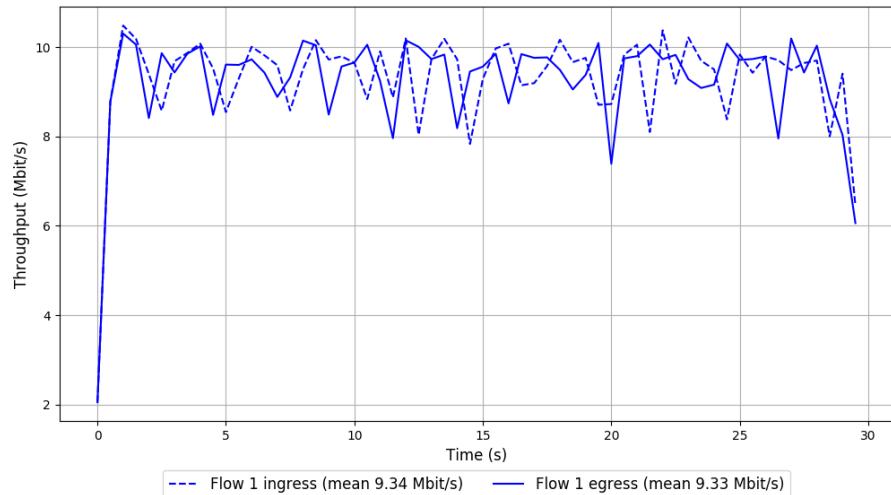


Run 1: Statistics of Sprout

```
Start at: Sun, 06 Aug 2017 07:18:38 +0000
End at: Sun, 06 Aug 2017 07:19:08 +0000
Local clock offset: 0.91 ms
Remote clock offset: -1.434 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:13 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.33 Mbit/s
95th percentile per-packet one-way delay: 44.173 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 9.33 Mbit/s
95th percentile per-packet one-way delay: 44.173 ms
Loss rate: 0.33%
```

Run 1: Report of Sprout — Data Link

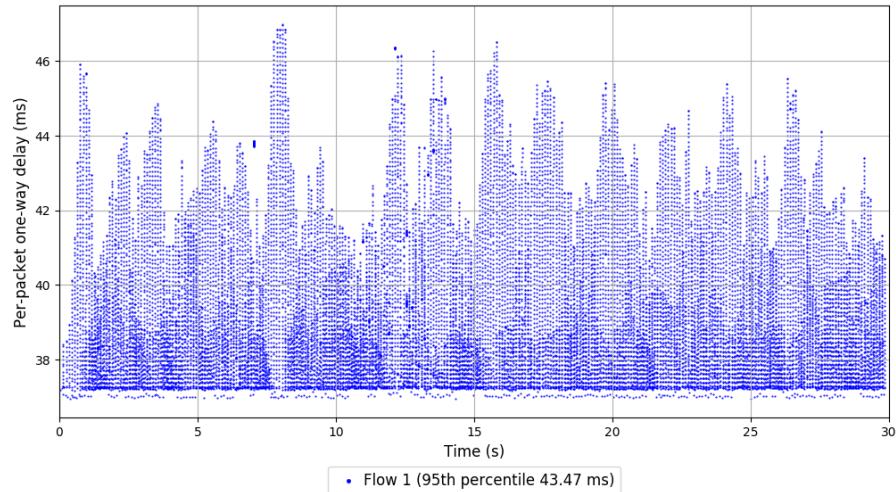
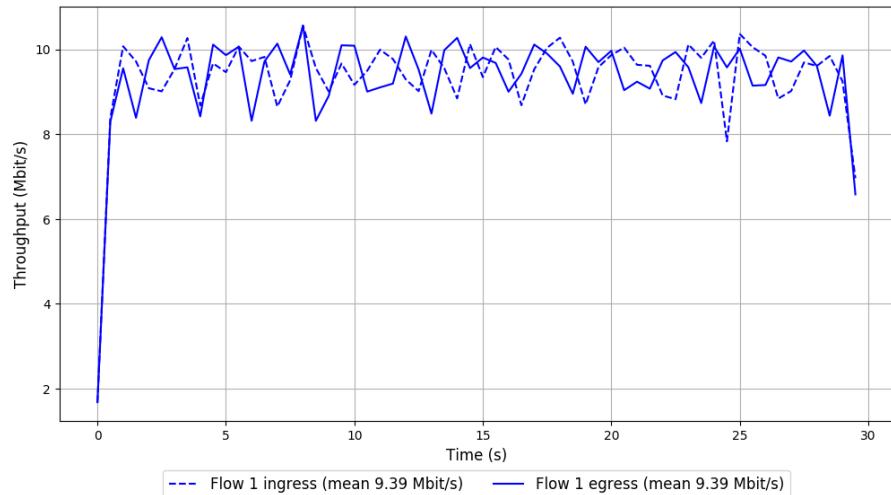


Run 2: Statistics of Sprout

```
Start at: Sun, 06 Aug 2017 07:38:49 +0000
End at: Sun, 06 Aug 2017 07:39:19 +0000
Local clock offset: 0.886 ms
Remote clock offset: -0.318 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:14 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 43.470 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 43.470 ms
Loss rate: 0.21%
```

Run 2: Report of Sprout — Data Link

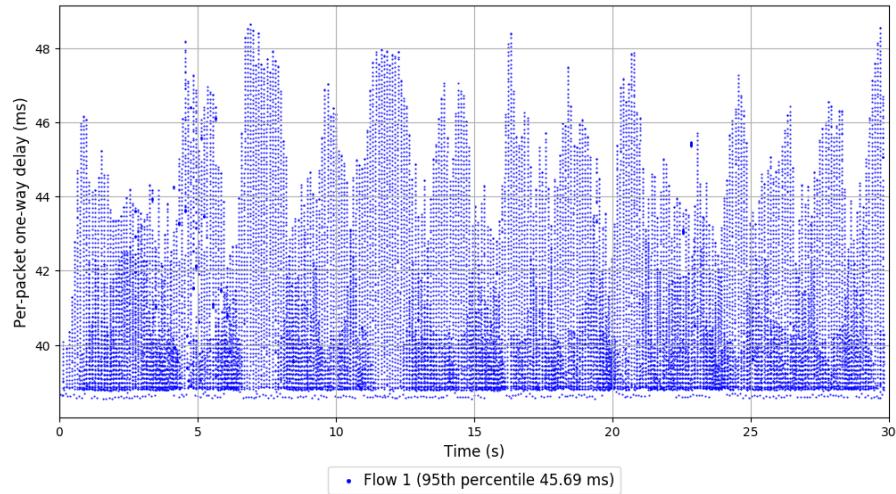
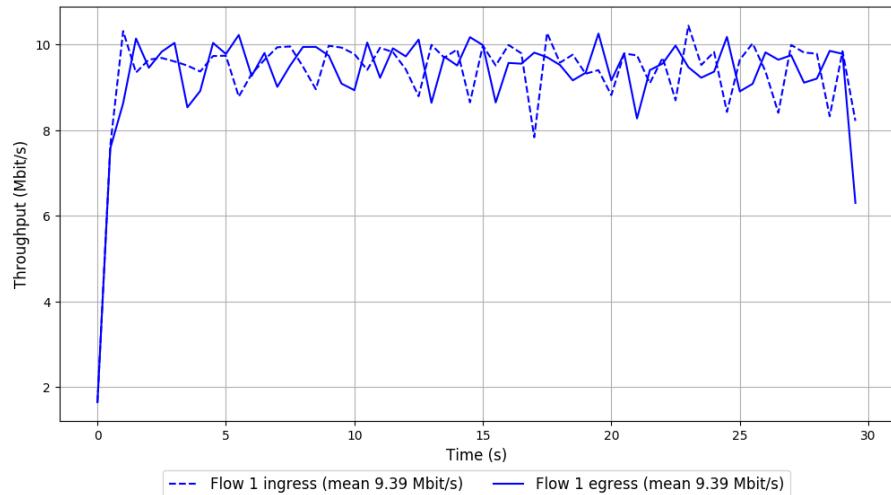


Run 3: Statistics of Sprout

```
Start at: Sun, 06 Aug 2017 07:58:57 +0000
End at: Sun, 06 Aug 2017 07:59:27 +0000
Local clock offset: 0.996 ms
Remote clock offset: -2.192 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:15 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 45.685 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 45.685 ms
Loss rate: 0.35%
```

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: Sun, 06 Aug 2017 07:17:13 +0000

End at: Sun, 06 Aug 2017 07:17:43 +0000

Local clock offset: 0.889 ms

Remote clock offset: -0.995 ms

Below is generated by plot.py at Sun, 06 Aug 2017 09:16:32 +0000

Datalink statistics

-- Total of 1 flow:

Average throughput: 69.95 Mbit/s

95th percentile per-packet one-way delay: 47.334 ms

Loss rate: 0.39%

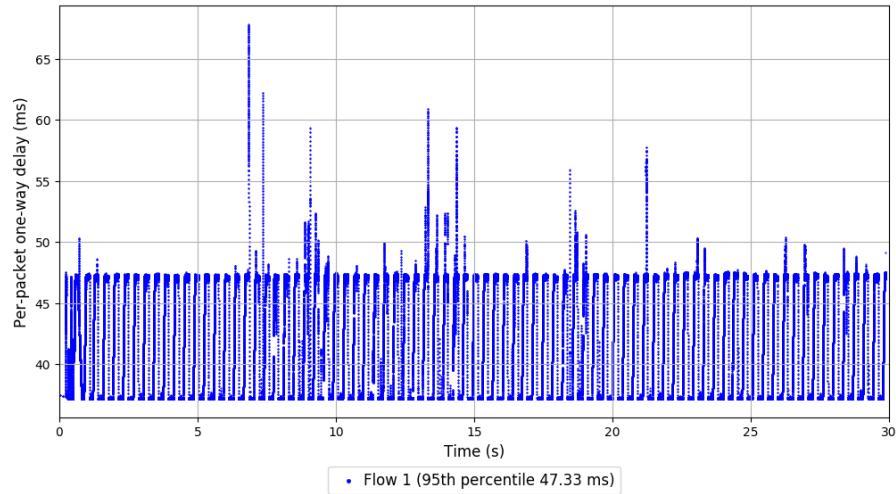
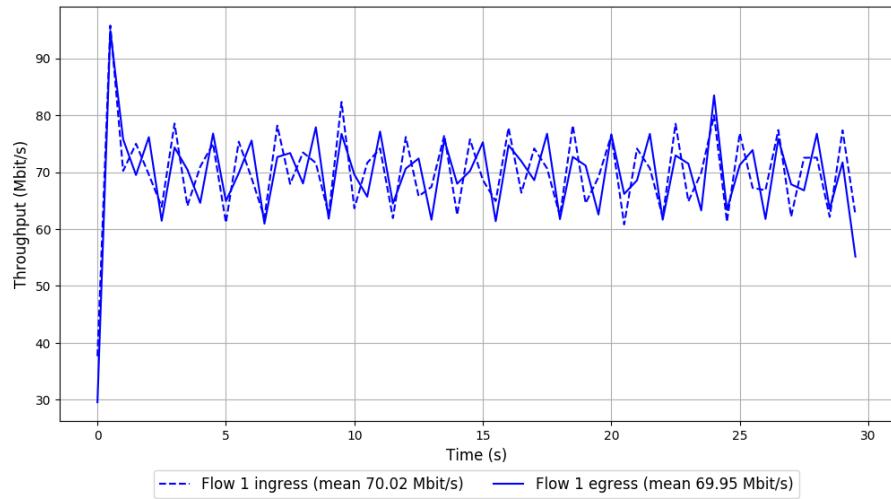
-- Flow 1:

Average throughput: 69.95 Mbit/s

95th percentile per-packet one-way delay: 47.334 ms

Loss rate: 0.39%

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

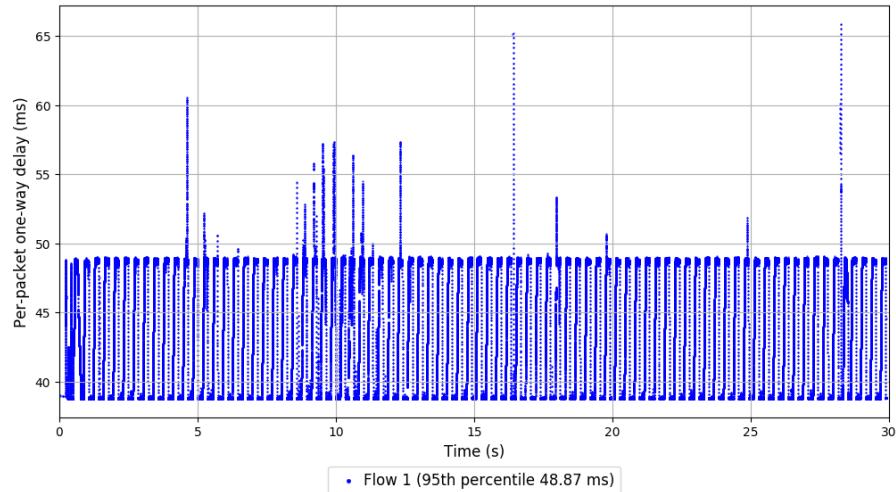
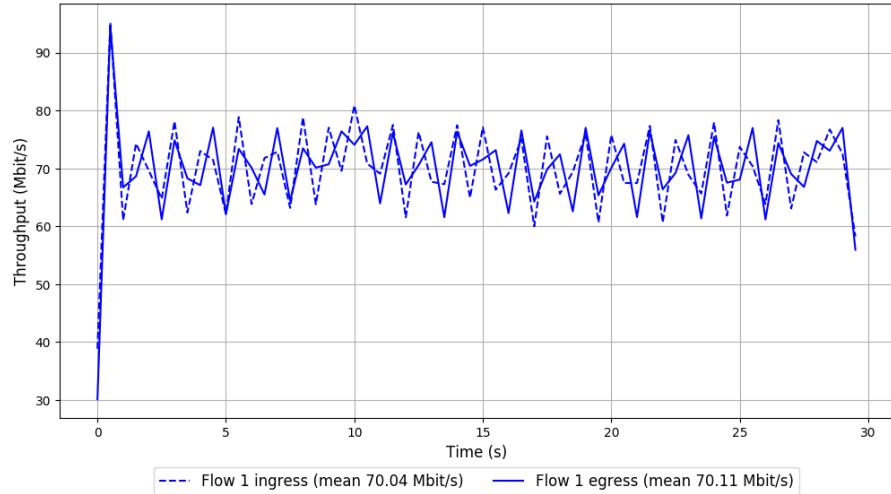


Run 2: Statistics of TaoVA-100x

```
Start at: Sun, 06 Aug 2017 07:37:25 +0000
End at: Sun, 06 Aug 2017 07:37:55 +0000
Local clock offset: 0.873 ms
Remote clock offset: -2.873 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:32 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.11 Mbit/s
95th percentile per-packet one-way delay: 48.867 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 70.11 Mbit/s
95th percentile per-packet one-way delay: 48.867 ms
Loss rate: 0.17%
```

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

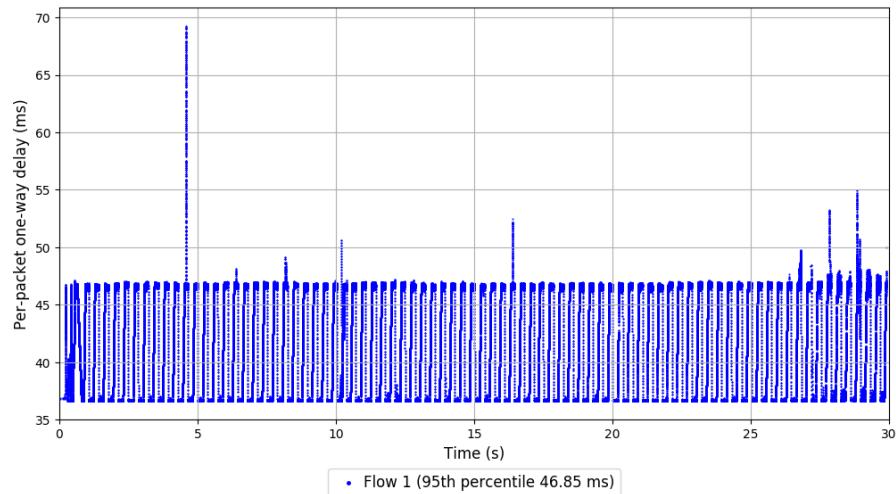
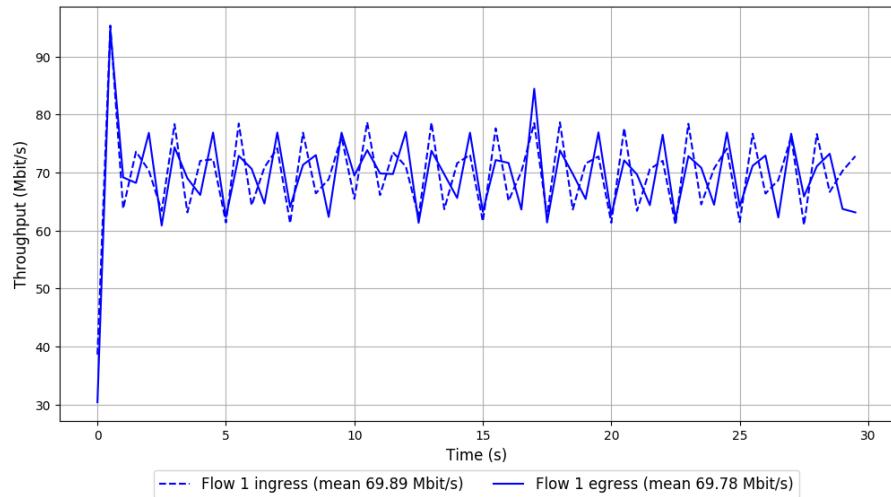


Run 3: Statistics of TaoVA-100x

```
Start at: Sun, 06 Aug 2017 07:57:32 +0000
End at: Sun, 06 Aug 2017 07:58:02 +0000
Local clock offset: 1.016 ms
Remote clock offset: -0.099 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:47 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.78 Mbit/s
95th percentile per-packet one-way delay: 46.854 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 69.78 Mbit/s
95th percentile per-packet one-way delay: 46.854 ms
Loss rate: 0.44%
```

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

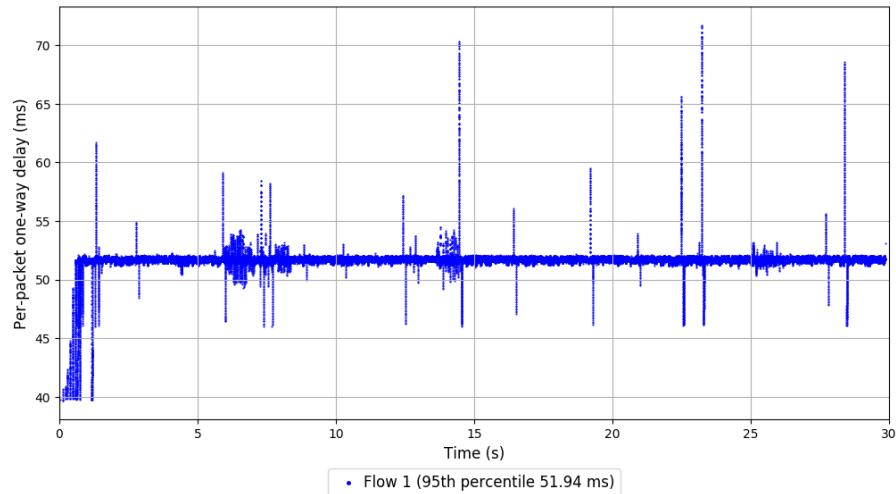
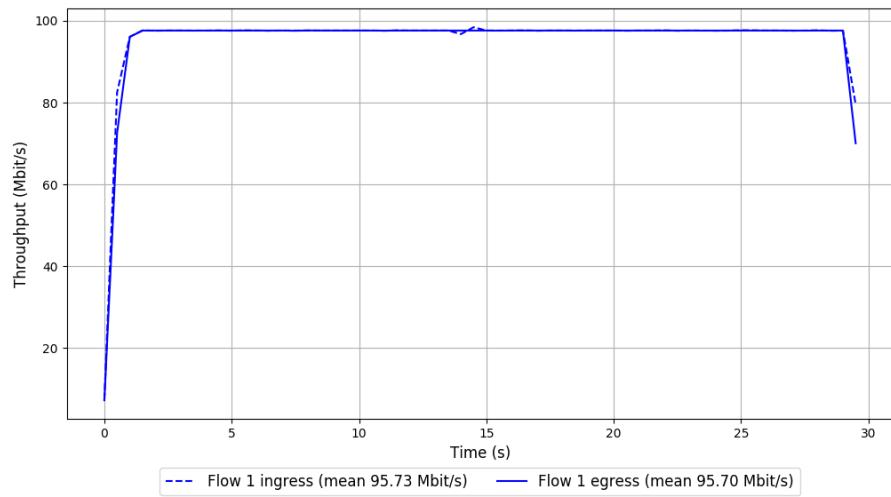


Run 1: Statistics of TCP Vegas

```
Start at: Sun, 06 Aug 2017 07:21:17 +0000
End at: Sun, 06 Aug 2017 07:21:47 +0000
Local clock offset: 0.824 ms
Remote clock offset: -3.534 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:47 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.70 Mbit/s
95th percentile per-packet one-way delay: 51.936 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 95.70 Mbit/s
95th percentile per-packet one-way delay: 51.936 ms
Loss rate: 0.34%
```

Run 1: Report of TCP Vegas — Data Link

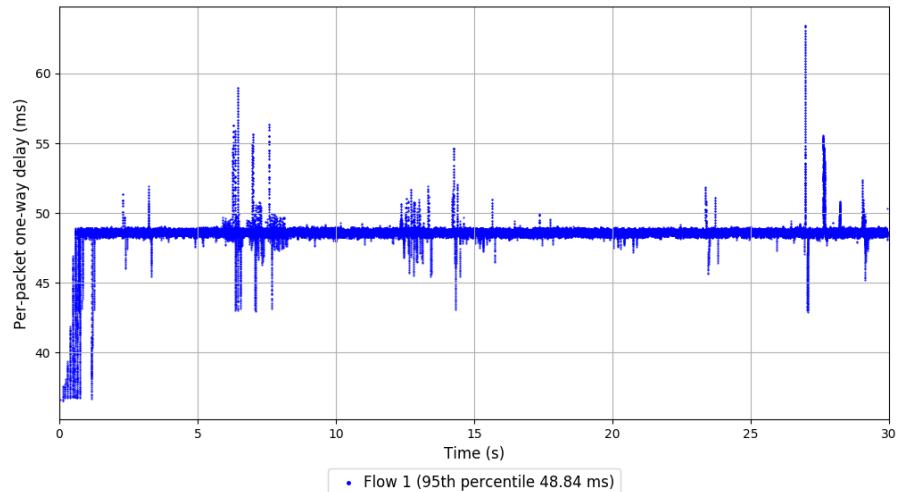
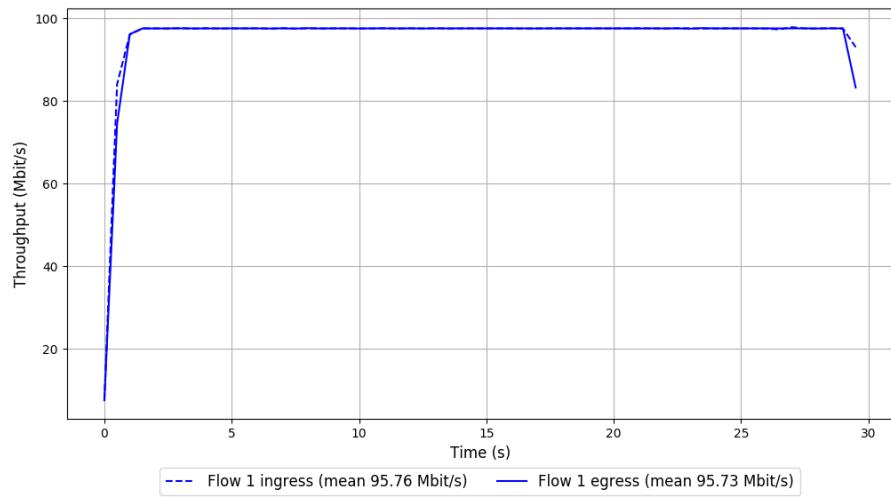


Run 2: Statistics of TCP Vegas

```
Start at: Sun, 06 Aug 2017 07:41:27 +0000
End at: Sun, 06 Aug 2017 07:41:57 +0000
Local clock offset: 0.878 ms
Remote clock offset: -0.688 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:16:59 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.73 Mbit/s
95th percentile per-packet one-way delay: 48.835 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 95.73 Mbit/s
95th percentile per-packet one-way delay: 48.835 ms
Loss rate: 0.34%
```

Run 2: Report of TCP Vegas — Data Link

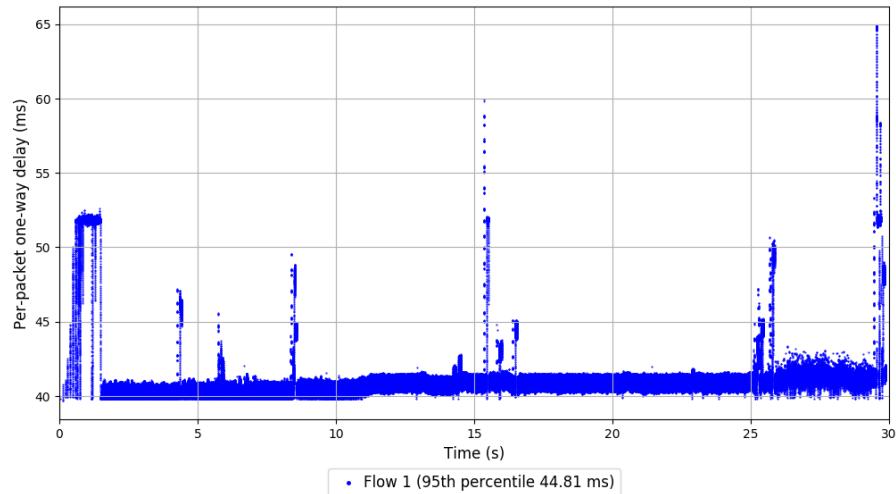
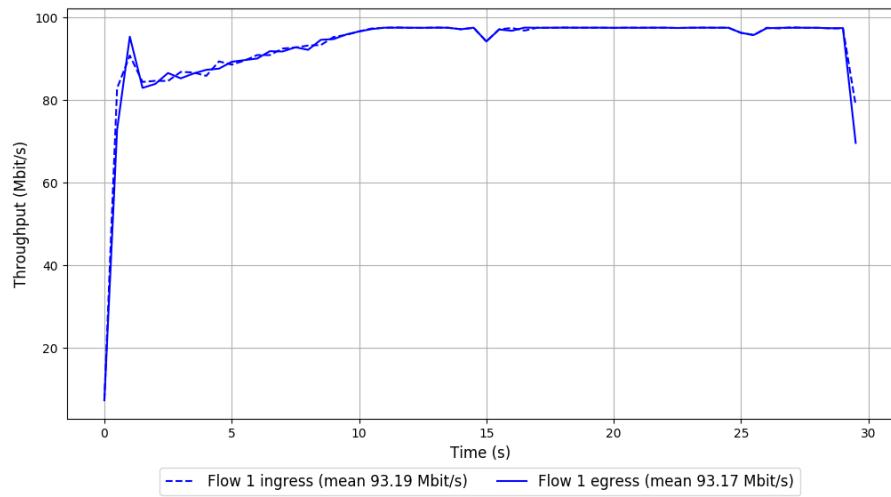


Run 3: Statistics of TCP Vegas

```
Start at: Sun, 06 Aug 2017 08:01:34 +0000
End at: Sun, 06 Aug 2017 08:02:04 +0000
Local clock offset: 1.003 ms
Remote clock offset: -2.227 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:17:00 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.17 Mbit/s
95th percentile per-packet one-way delay: 44.815 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 93.17 Mbit/s
95th percentile per-packet one-way delay: 44.815 ms
Loss rate: 0.31%
```

Run 3: Report of TCP Vegas — Data Link

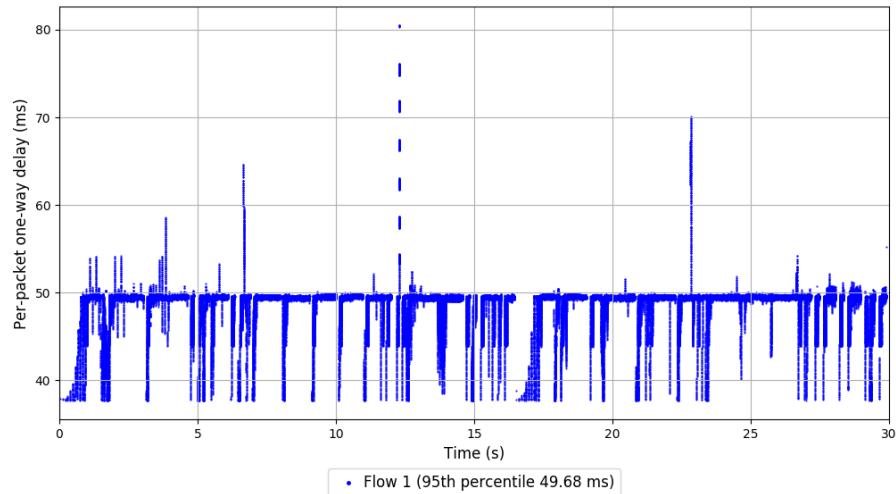
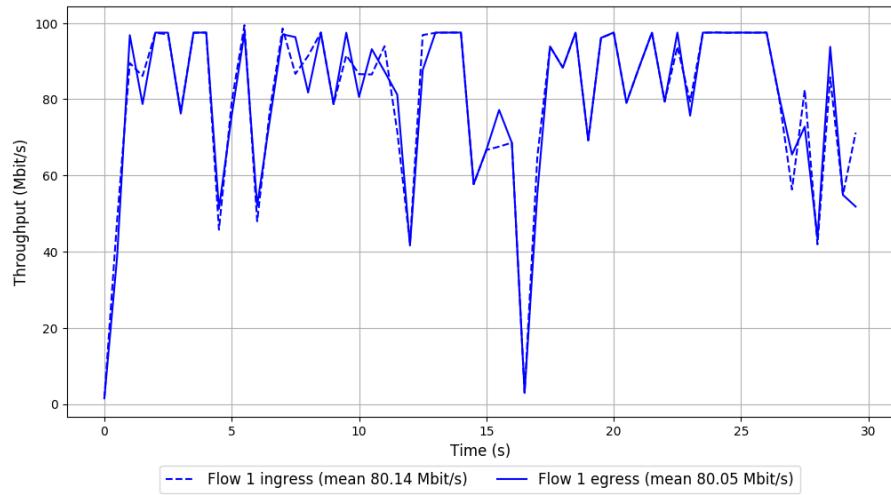


Run 1: Statistics of Verus

```
Start at: Sun, 06 Aug 2017 07:14:33 +0000
End at: Sun, 06 Aug 2017 07:15:03 +0000
Local clock offset: 0.797 ms
Remote clock offset: -1.654 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:17:10 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.05 Mbit/s
95th percentile per-packet one-way delay: 49.682 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 80.05 Mbit/s
95th percentile per-packet one-way delay: 49.682 ms
Loss rate: 0.40%
```

Run 1: Report of Verus — Data Link

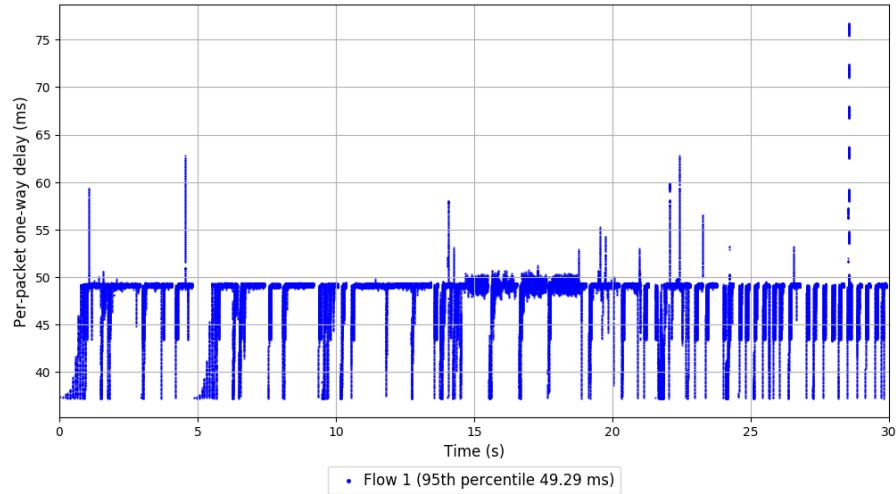
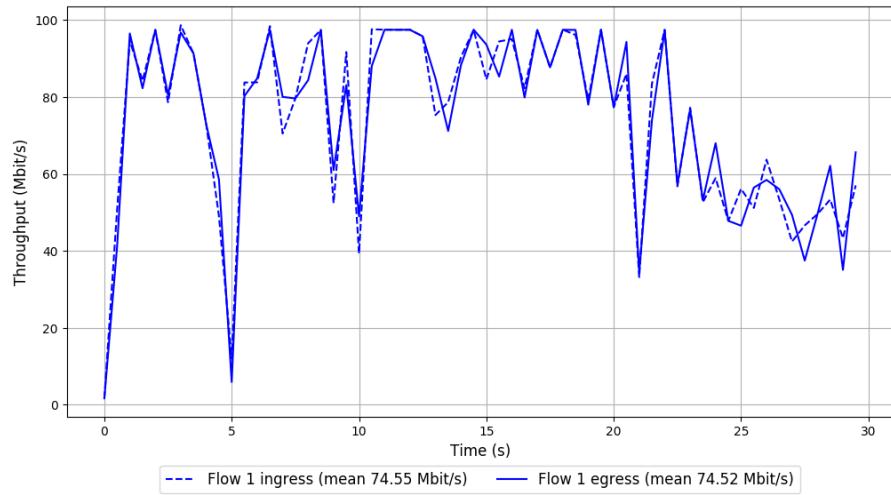


Run 2: Statistics of Verus

```
Start at: Sun, 06 Aug 2017 07:34:45 +0000
End at: Sun, 06 Aug 2017 07:35:15 +0000
Local clock offset: 0.961 ms
Remote clock offset: -0.445 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:17:10 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 74.52 Mbit/s
95th percentile per-packet one-way delay: 49.287 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 74.52 Mbit/s
95th percentile per-packet one-way delay: 49.287 ms
Loss rate: 0.00%
```

Run 2: Report of Verus — Data Link

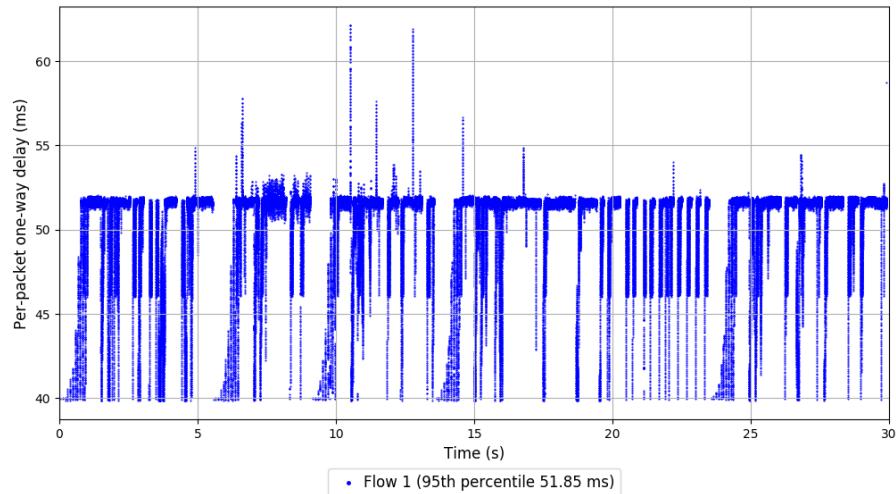
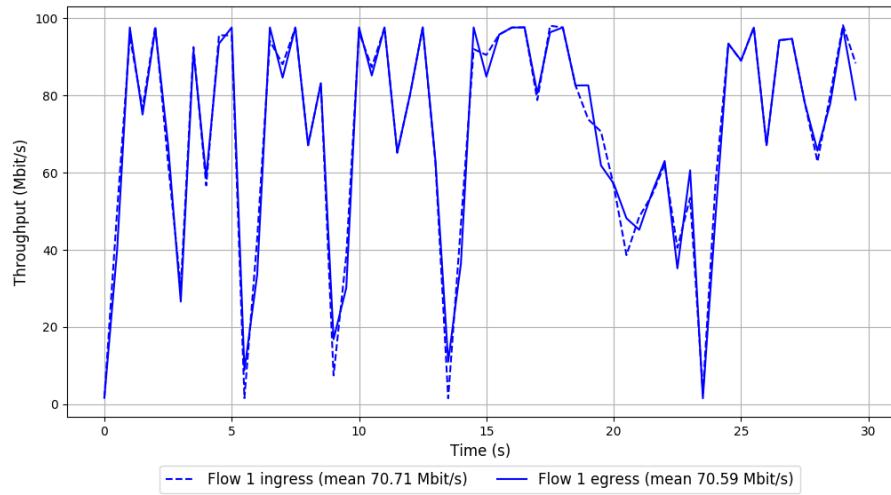


Run 3: Statistics of Verus

```
Start at: Sun, 06 Aug 2017 07:54:53 +0000
End at: Sun, 06 Aug 2017 07:55:23 +0000
Local clock offset: 0.992 ms
Remote clock offset: -2.465 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:17:16 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.59 Mbit/s
95th percentile per-packet one-way delay: 51.849 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 70.59 Mbit/s
95th percentile per-packet one-way delay: 51.849 ms
Loss rate: 0.46%
```

Run 3: Report of Verus — Data Link

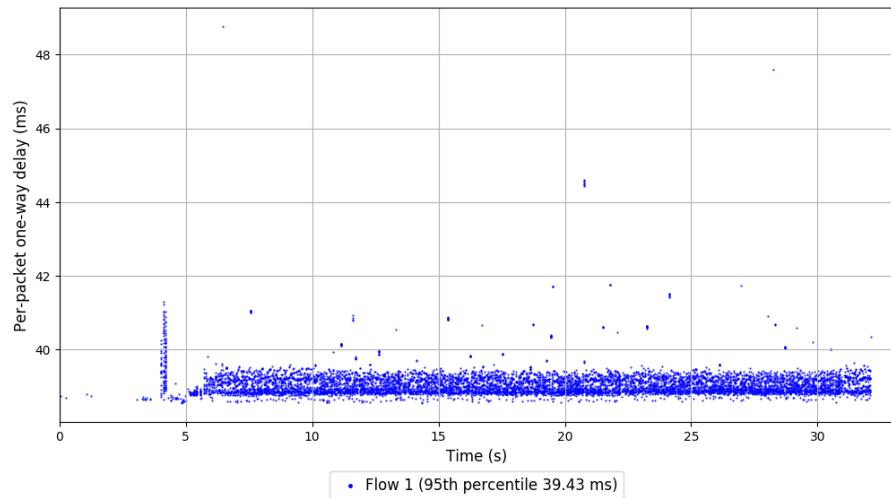
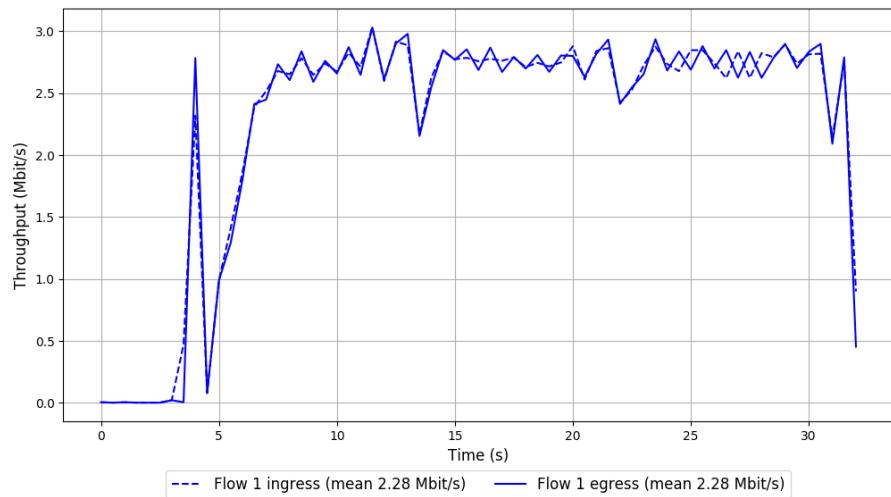


```
Run 1: Statistics of WebRTC media

Start at: Sun, 06 Aug 2017 07:25:22 +0000
End at: Sun, 06 Aug 2017 07:25:52 +0000
Local clock offset: 0.957 ms
Remote clock offset: -3.226 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:17:16 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 39.429 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 39.429 ms
Loss rate: 0.41%
```

Run 1: Report of WebRTC media — Data Link

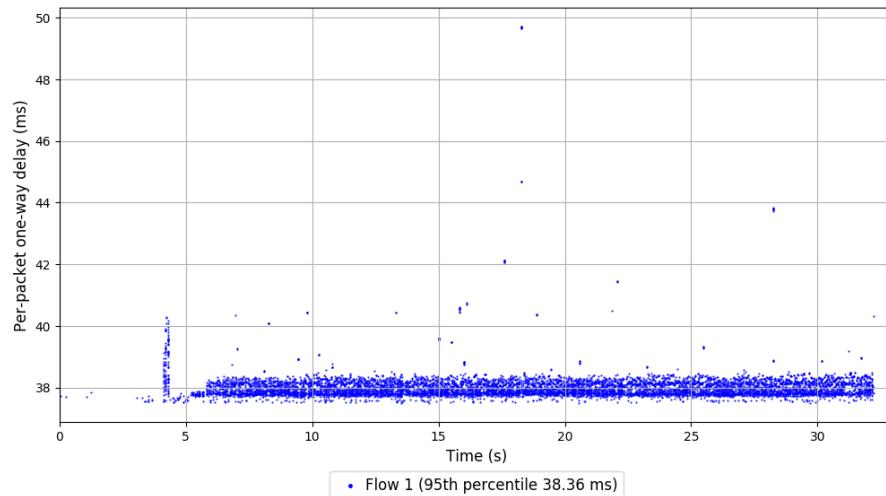
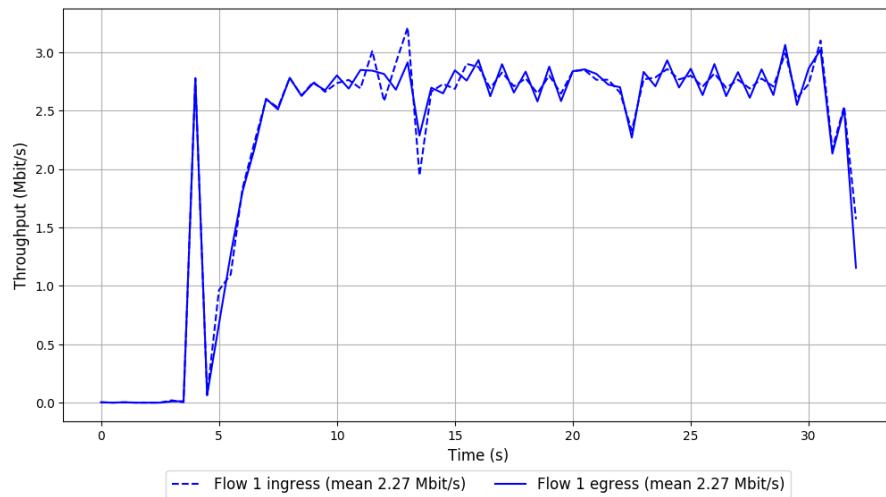


Run 2: Statistics of WebRTC media

```
Start at: Sun, 06 Aug 2017 07:45:31 +0000
End at: Sun, 06 Aug 2017 07:46:01 +0000
Local clock offset: 0.962 ms
Remote clock offset: -0.633 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:17:16 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 38.360 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 38.360 ms
Loss rate: 0.43%
```

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

```
Start at: Sun, 06 Aug 2017 08:05:38 +0000
End at: Sun, 06 Aug 2017 08:06:08 +0000
Local clock offset: 0.973 ms
Remote clock offset: -2.17 ms

# Below is generated by plot.py at Sun, 06 Aug 2017 09:17:16 +0000
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 40.490 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 40.490 ms
Loss rate: 0.34%
```

Run 3: Report of WebRTC media — Data Link

