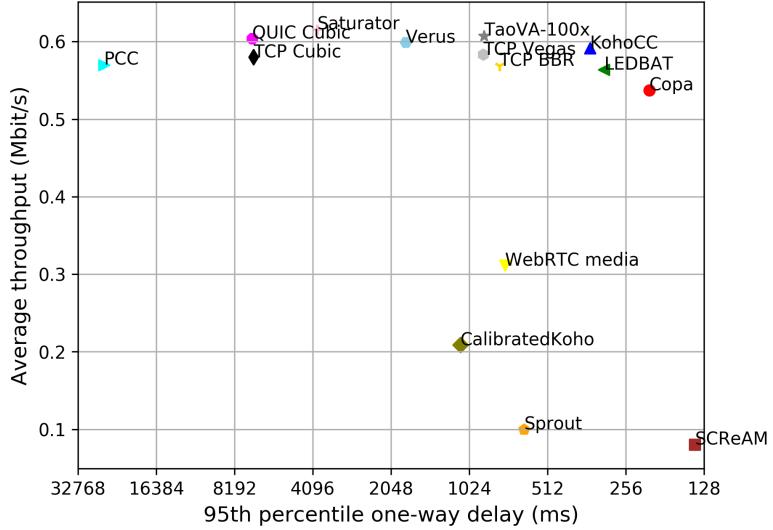


Pantheon Report

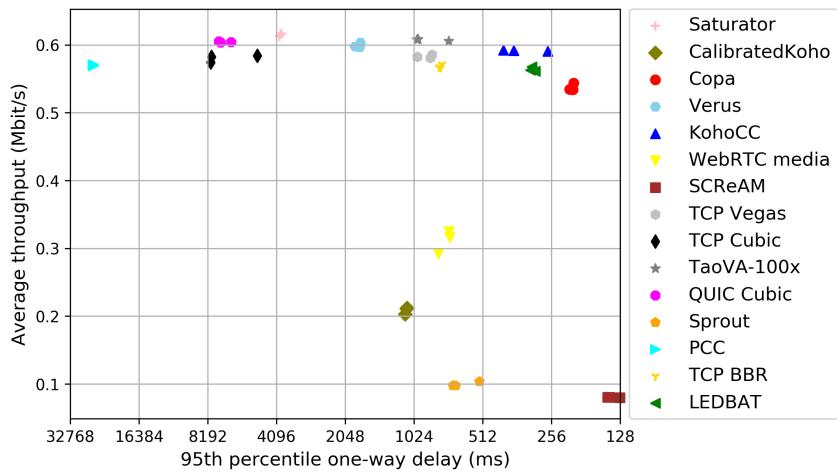
Generated at 2017-08-21 06:13:53 (UTC).
Data path: Colombia ppp0 (*remote*) → AWS Brazil 2 Ethernet (*local*).
Repeated the test of 15 congestion control schemes 3 times.
Each test lasted for 30 seconds running 1 flow.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).
NTP offsets were measured against **gps.ntp.br** and have been applied to correct the timestamps in logs.

Git summary:
branch: master @ e43be7582298d552838afcfc6382342bf187fbbd6
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 @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-stimuli @ fc73a85ca16c34366d1888dc8a0d0d88d4ebf2a7
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42

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



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



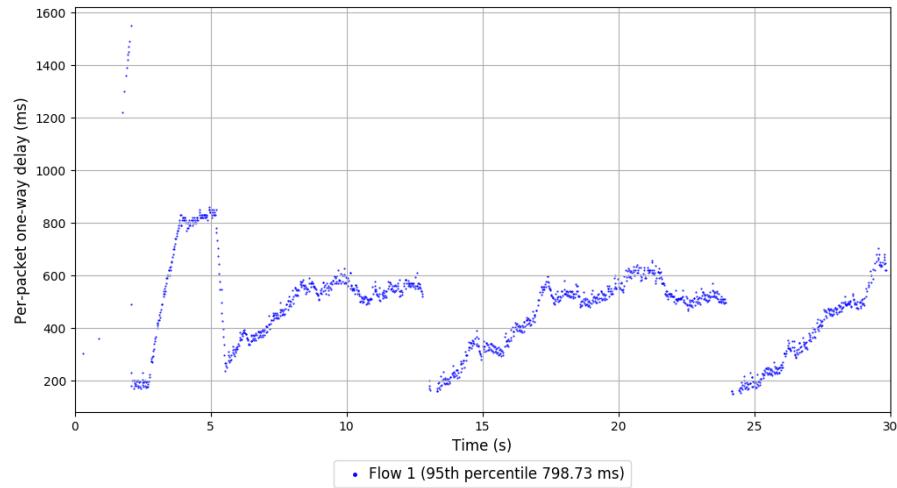
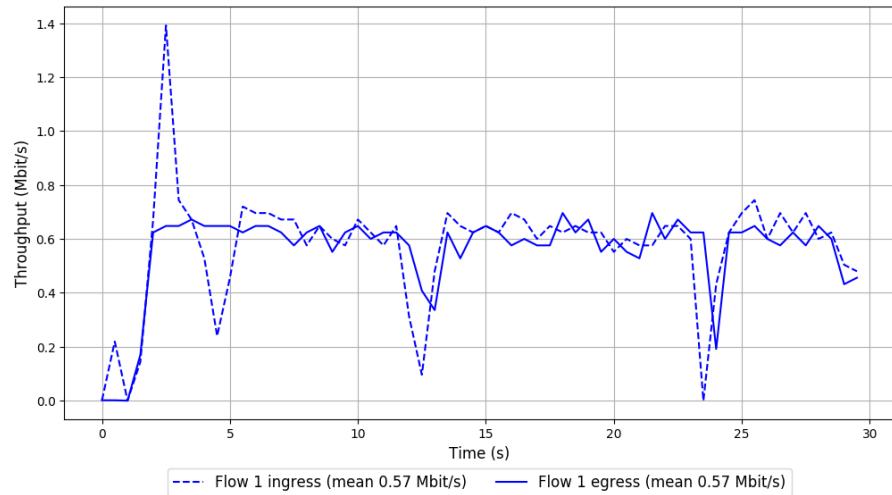
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.57	785.16	2.10
CalibratedKoho	3	0.21	1108.68	1.39
Copa	3	0.53	208.28	0.86
TCP Cubic	3	0.58	6945.90	25.84
KohoCC	3	0.59	352.47	1.20
LEDBAT	3	0.56	310.62	1.25
PCC	3	0.57	26036.37	98.59
QUIC Cubic	3	0.60	7006.49	28.47
Saturator	3	0.62	3940.97	12.38
SCReAM	3	0.08	138.88	0.70
Sprout	3	0.10	631.86	1.20
TaoVA-100x	3	0.61	900.86	6.44
TCP Vegas	3	0.58	905.32	1.10
Verus	3	0.60	1800.19	4.33
WebRTC media	3	0.31	746.01	1.89

Run 1: Statistics of TCP BBR

```
Start at: 2017-08-21 04:38:09
End at: 2017-08-21 04:38:39
Local clock offset: 0.99 ms
Remote clock offset: -3.286 ms

# Below is generated by plot.py at 2017-08-21 06:13:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 798.730 ms
Loss rate: 2.10%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 798.730 ms
Loss rate: 2.10%
```

Run 1: Report of TCP BBR — Data Link

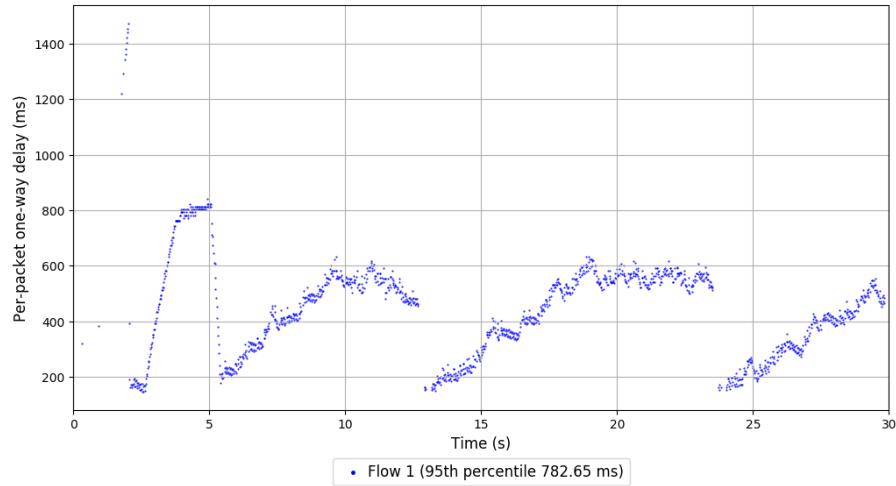
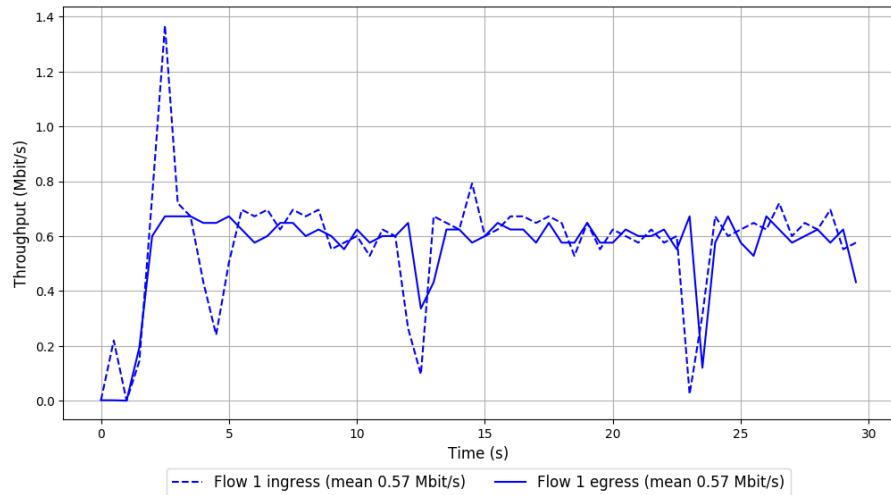


Run 2: Statistics of TCP BBR

```
Start at: 2017-08-21 04:55:44
End at: 2017-08-21 04:56:14
Local clock offset: 0.845 ms
Remote clock offset: -2.692 ms

# Below is generated by plot.py at 2017-08-21 06:13:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 782.646 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 782.646 ms
Loss rate: 2.11%
```

Run 2: Report of TCP BBR — Data Link

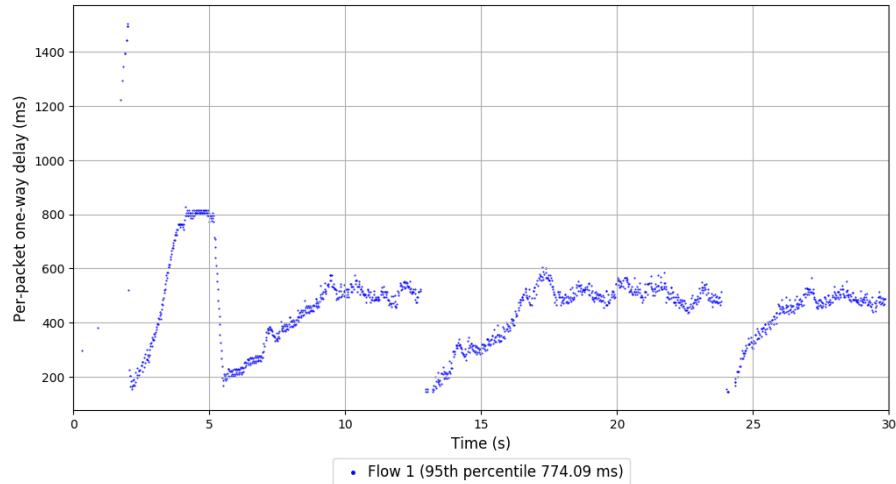
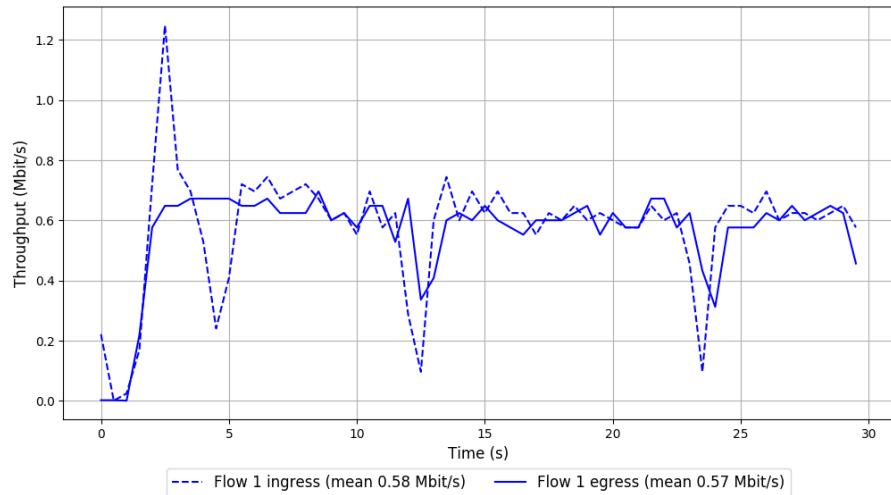


Run 3: Statistics of TCP BBR

```
Start at: 2017-08-21 05:13:18
End at: 2017-08-21 05:13:48
Local clock offset: 0.478 ms
Remote clock offset: 0.325 ms

# Below is generated by plot.py at 2017-08-21 06:13:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 774.093 ms
Loss rate: 2.09%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 774.093 ms
Loss rate: 2.09%
```

Run 3: Report of TCP BBR — Data Link

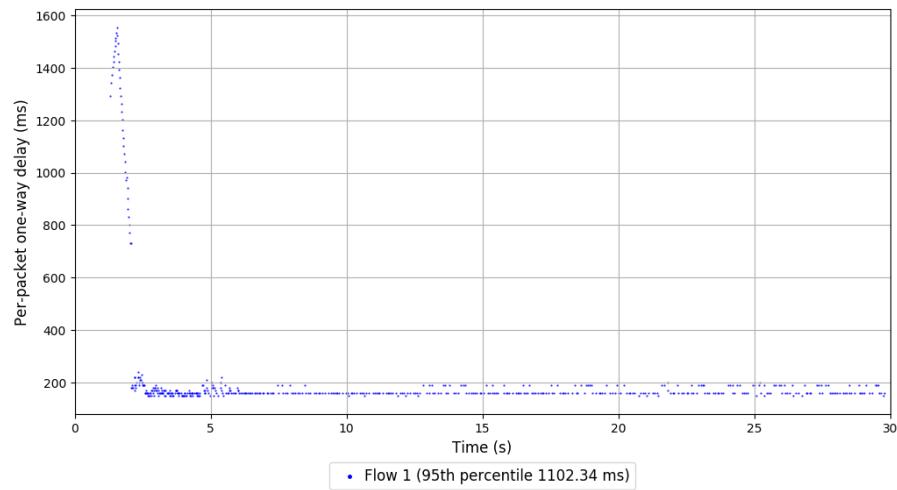
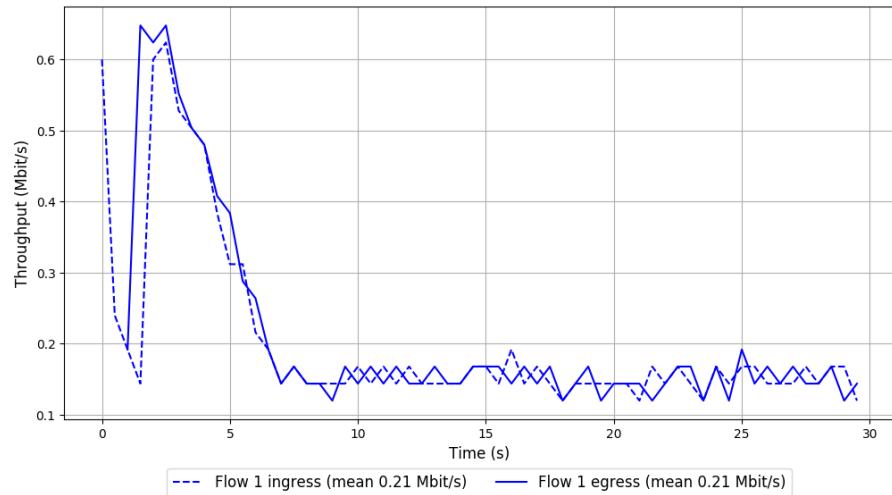


```
Run 1: Statistics of CalibratedKoho

Start at: 2017-08-21 04:42:52
End at: 2017-08-21 04:43:22
Local clock offset: 0.865 ms
Remote clock offset: -2.44 ms

# Below is generated by plot.py at 2017-08-21 06:13:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 1102.340 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 1102.340 ms
Loss rate: 1.37%
```

Run 1: Report of CalibratedKoho — Data Link

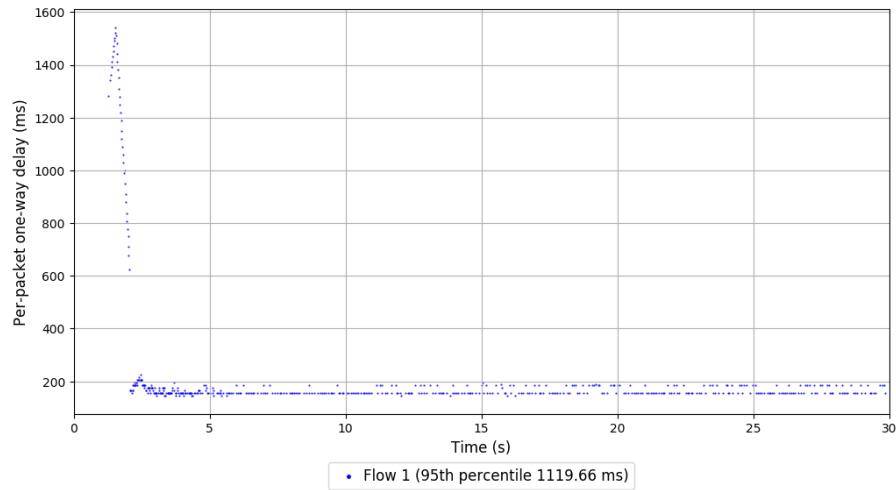
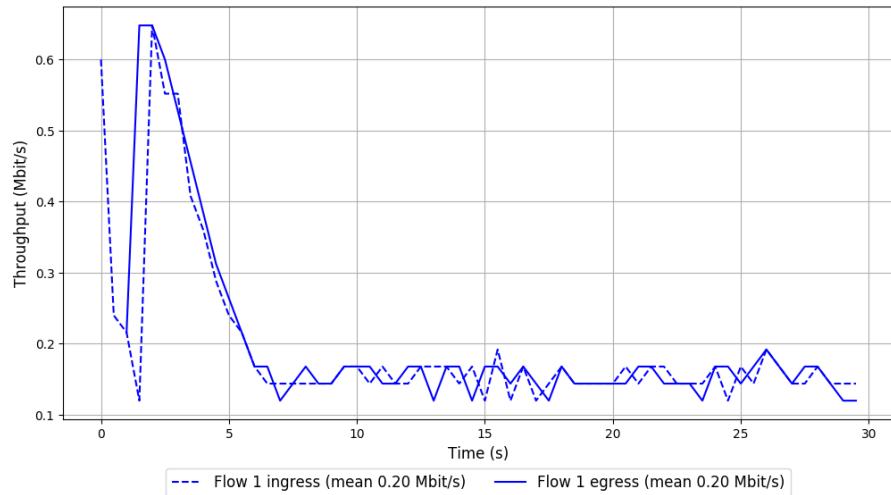


Run 2: Statistics of CalibratedKoho

```
Start at: 2017-08-21 05:00:27
End at: 2017-08-21 05:00:57
Local clock offset: 0.776 ms
Remote clock offset: -3.592 ms

# Below is generated by plot.py at 2017-08-21 06:13:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 1119.665 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 1119.665 ms
Loss rate: 1.43%
```

Run 2: Report of CalibratedKoho — Data Link

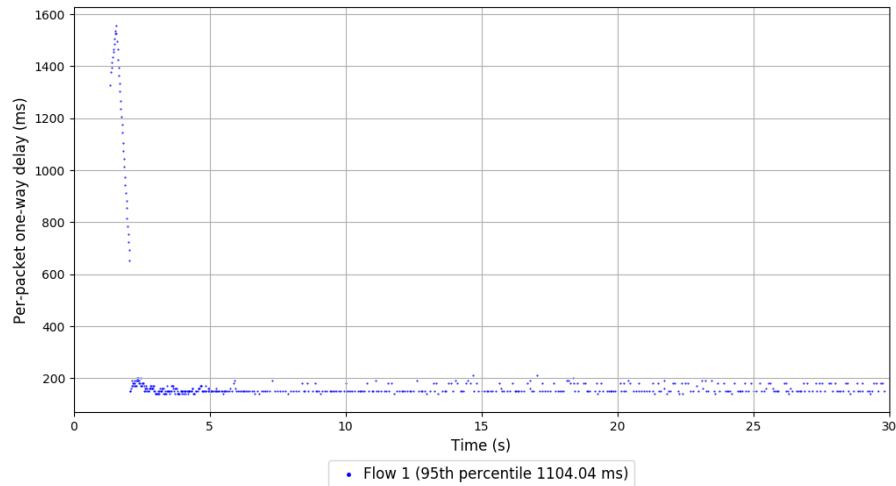
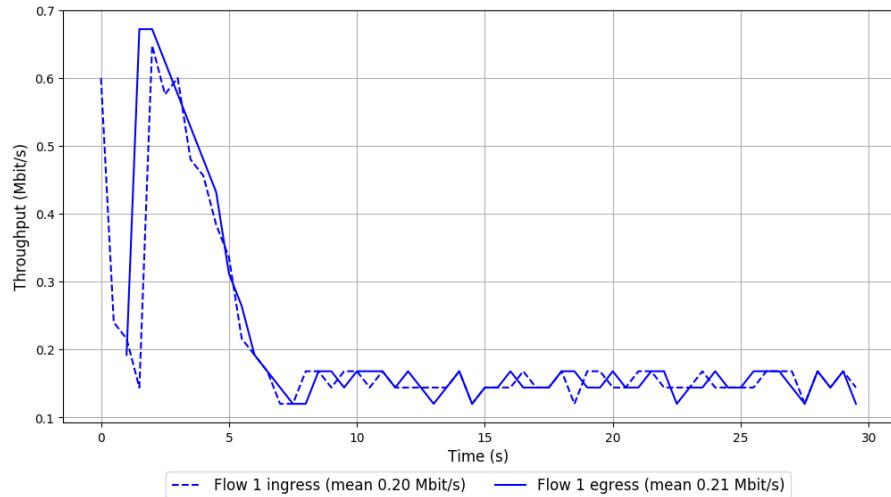


```
Run 3: Statistics of CalibratedKoho
```

```
Start at: 2017-08-21 05:18:00
End at: 2017-08-21 05:18:30
Local clock offset: 0.399 ms
Remote clock offset: 0.236 ms

# Below is generated by plot.py at 2017-08-21 06:13:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 1104.036 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 1104.036 ms
Loss rate: 1.38%
```

Run 3: Report of CalibratedKoho — Data Link

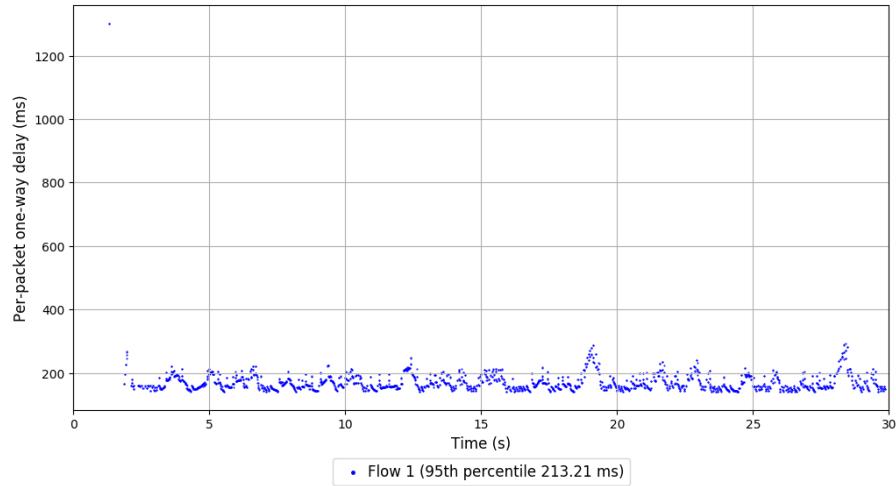
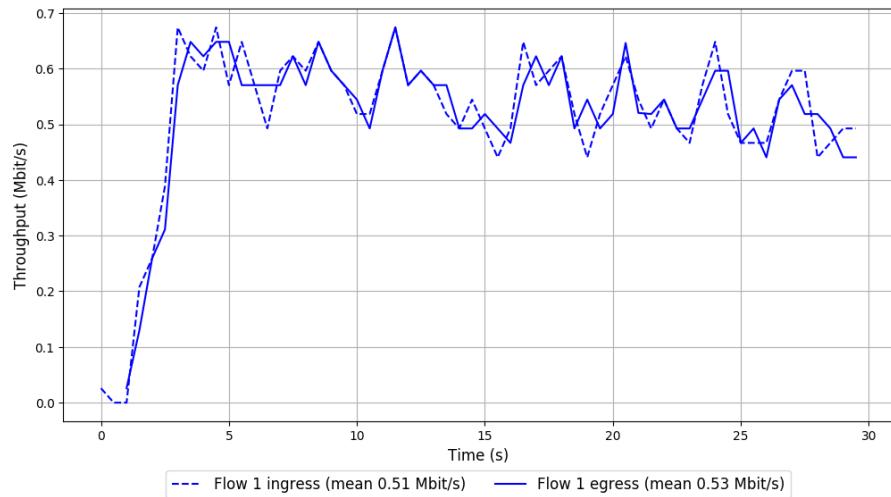


```
Run 1: Statistics of Copa
```

```
Start at: 2017-08-21 04:39:19
End at: 2017-08-21 04:39:49
Local clock offset: 0.979 ms
Remote clock offset: -2.461 ms

# Below is generated by plot.py at 2017-08-21 06:13:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 213.214 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 213.214 ms
Loss rate: 0.84%
```

Run 1: Report of Copa — Data Link

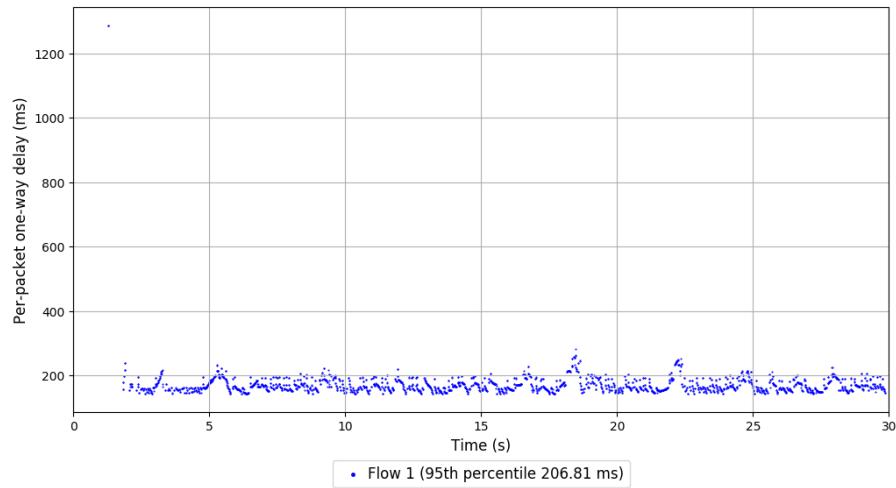
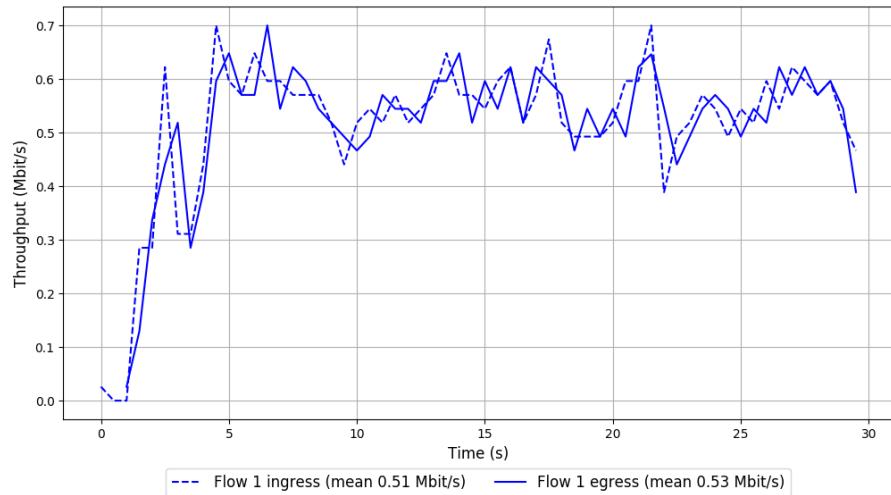


Run 2: Statistics of Copa

```
Start at: 2017-08-21 04:56:54
End at: 2017-08-21 04:57:24
Local clock offset: 0.74 ms
Remote clock offset: -3.535 ms

# Below is generated by plot.py at 2017-08-21 06:13:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 206.811 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 206.811 ms
Loss rate: 0.76%
```

Run 2: Report of Copa — Data Link

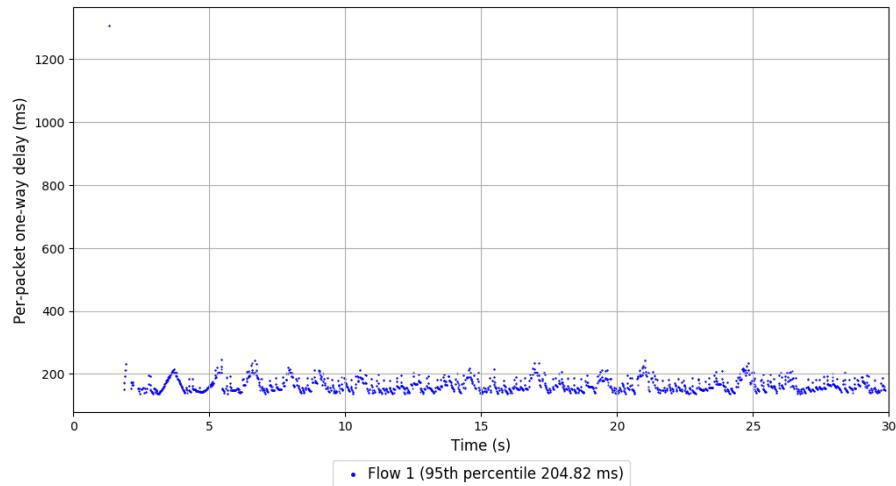
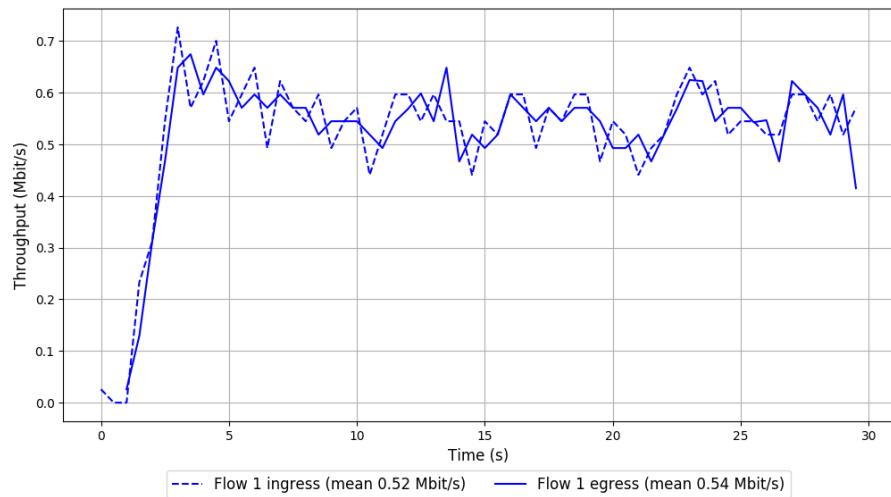


Run 3: Statistics of Copa

```
Start at: 2017-08-21 05:14:28
End at: 2017-08-21 05:14:58
Local clock offset: 0.472 ms
Remote clock offset: 1.143 ms

# Below is generated by plot.py at 2017-08-21 06:13:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 204.817 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 204.817 ms
Loss rate: 0.99%
```

Run 3: Report of Copa — Data Link

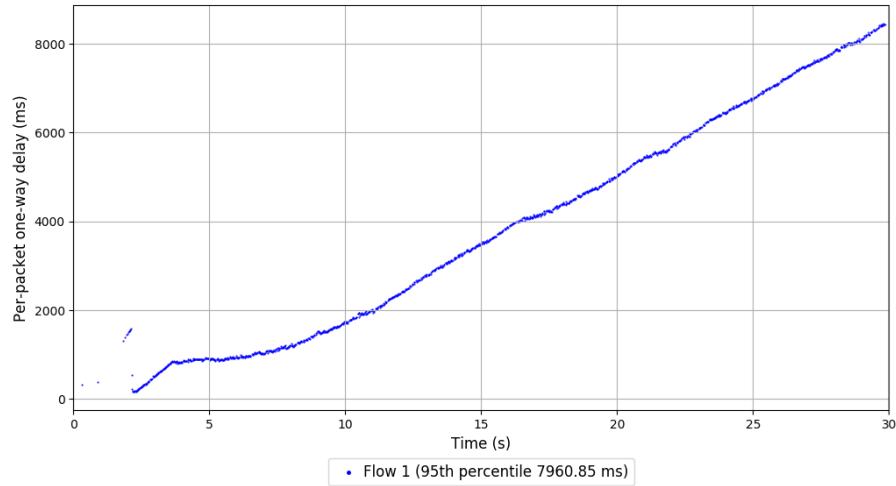
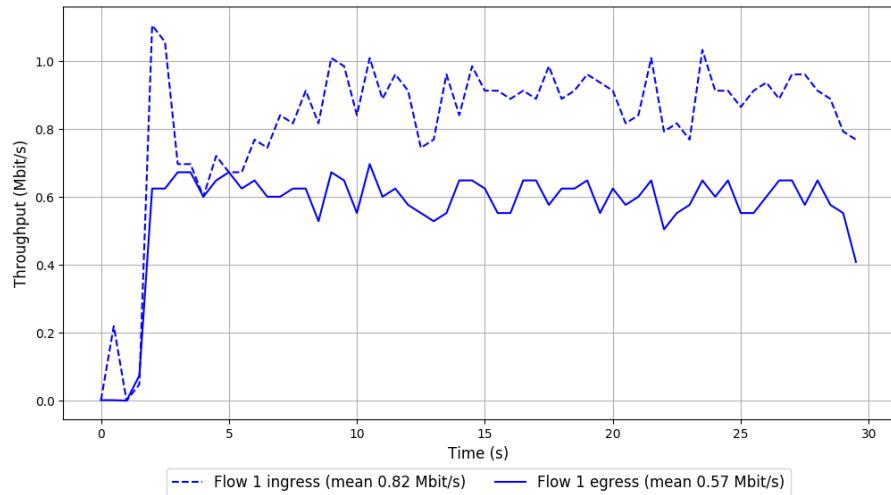


Run 1: Statistics of TCP Cubic

```
Start at: 2017-08-21 04:31:07
End at: 2017-08-21 04:31:37
Local clock offset: 1.056 ms
Remote clock offset: -3.314 ms

# Below is generated by plot.py at 2017-08-21 06:13:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 7960.852 ms
Loss rate: 31.00%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 7960.852 ms
Loss rate: 31.00%
```

Run 1: Report of TCP Cubic — Data Link

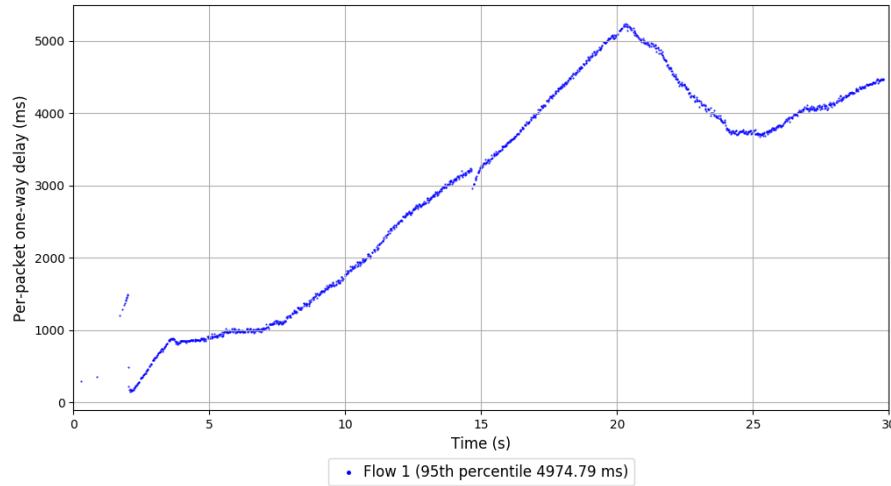
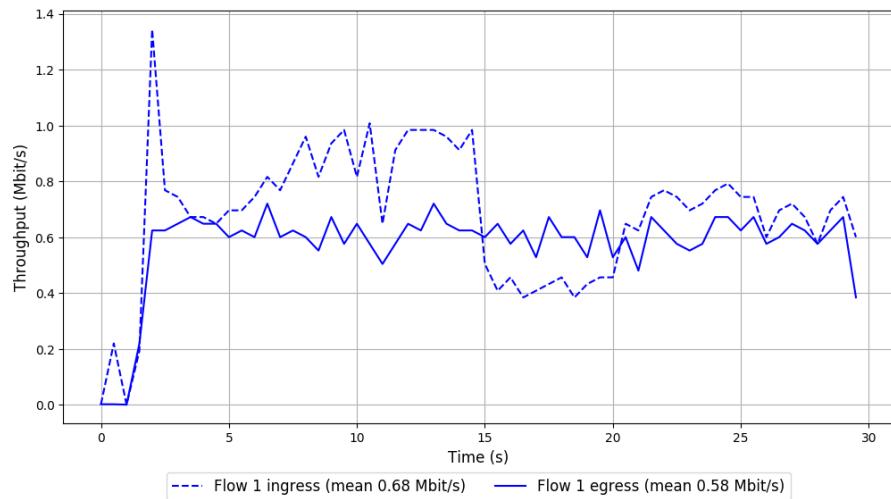


Run 2: Statistics of TCP Cubic

```
Start at: 2017-08-21 04:48:42
End at: 2017-08-21 04:49:12
Local clock offset: 0.896 ms
Remote clock offset: 1.376 ms

# Below is generated by plot.py at 2017-08-21 06:13:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 4974.789 ms
Loss rate: 15.53%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 4974.789 ms
Loss rate: 15.53%
```

Run 2: Report of TCP Cubic — Data Link

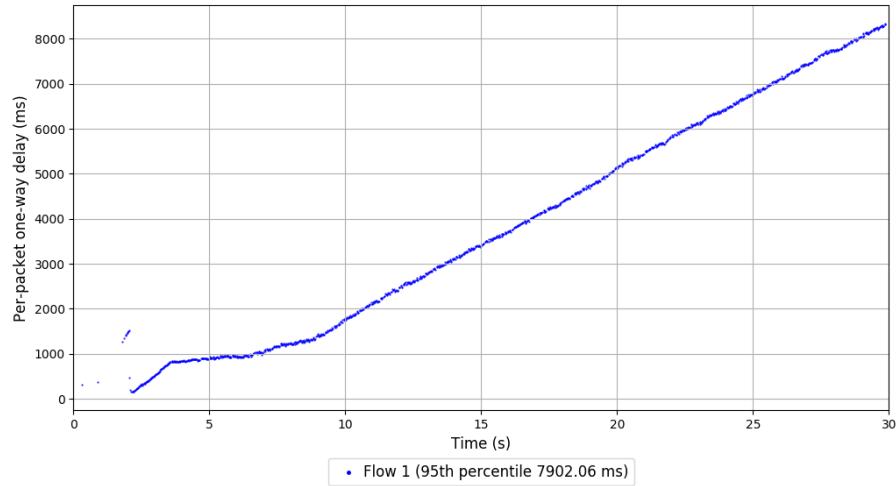
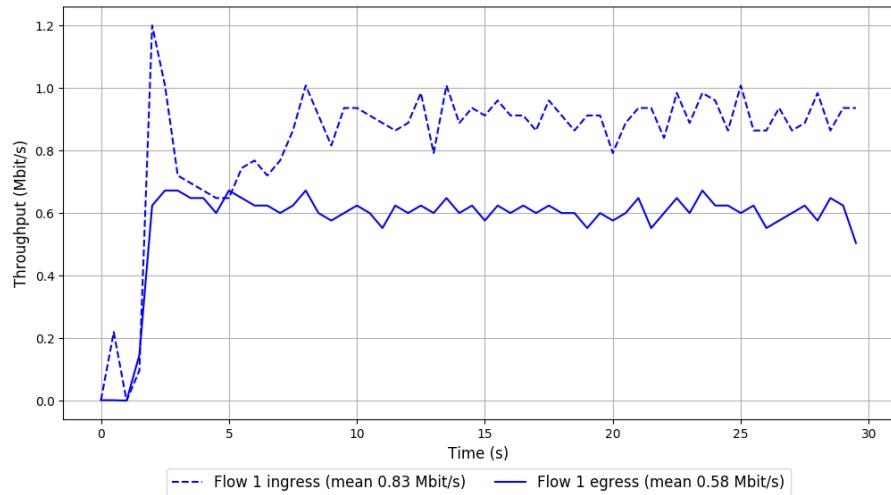


Run 3: Statistics of TCP Cubic

```
Start at: 2017-08-21 05:06:17
End at: 2017-08-21 05:06:47
Local clock offset: 0.643 ms
Remote clock offset: 2.073 ms

# Below is generated by plot.py at 2017-08-21 06:13:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7902.065 ms
Loss rate: 30.99%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 7902.065 ms
Loss rate: 30.99%
```

Run 3: Report of TCP Cubic — Data Link

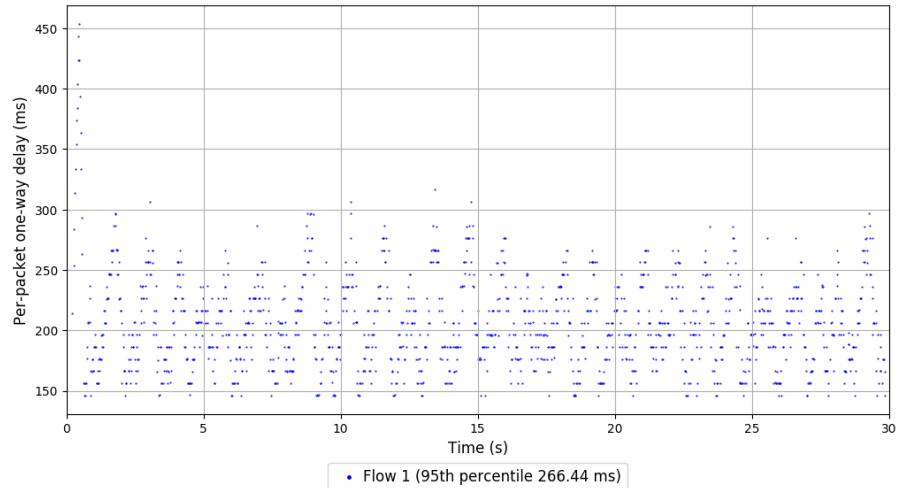
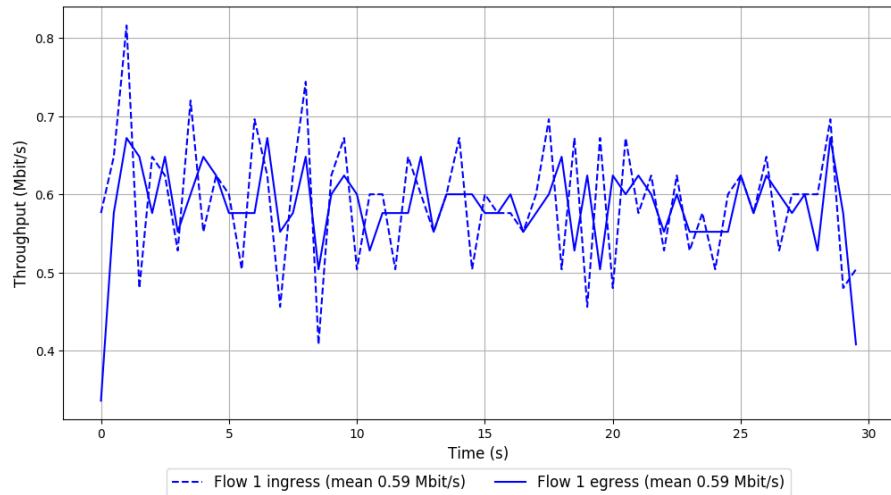


```
Run 1: Statistics of KohoCC
```

```
Start at: 2017-08-21 04:27:37
End at: 2017-08-21 04:28:07
Local clock offset: 1.079 ms
Remote clock offset: -3.36 ms

# Below is generated by plot.py at 2017-08-21 06:13:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 266.444 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 266.444 ms
Loss rate: 1.15%
```

Run 1: Report of KohoCC — Data Link

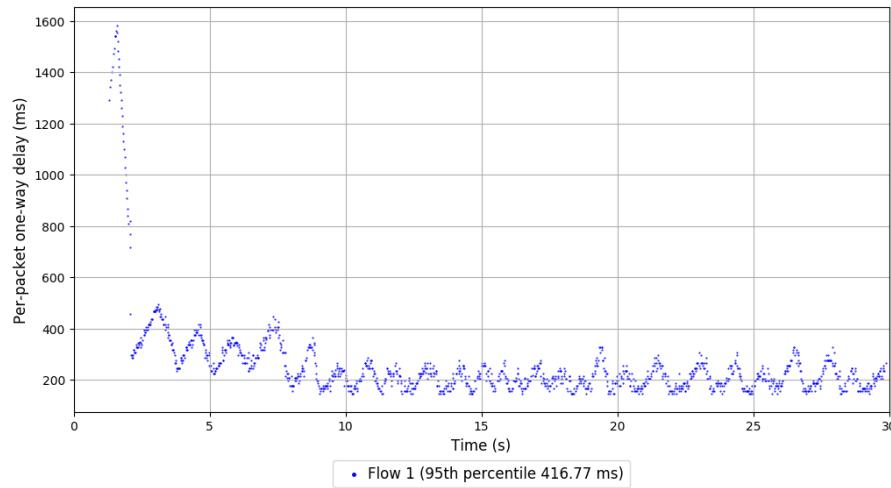
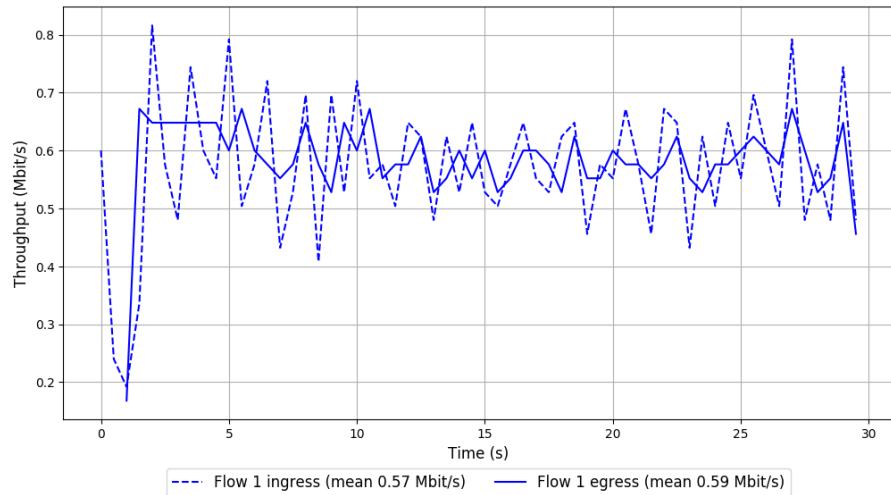


Run 2: Statistics of KohoCC

```
Start at: 2017-08-21 04:45:12
End at: 2017-08-21 04:45:42
Local clock offset: 0.949 ms
Remote clock offset: -3.323 ms

# Below is generated by plot.py at 2017-08-21 06:13:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 416.766 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 416.766 ms
Loss rate: 1.19%
```

Run 2: Report of KohoCC — Data Link

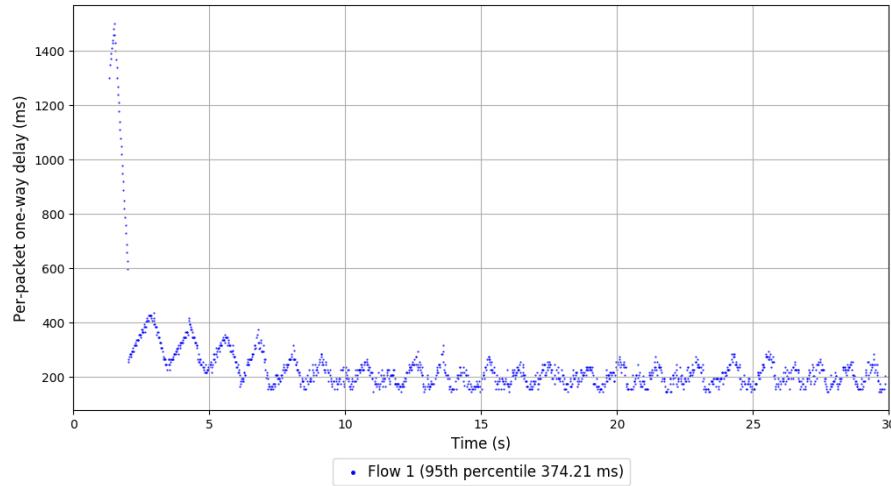
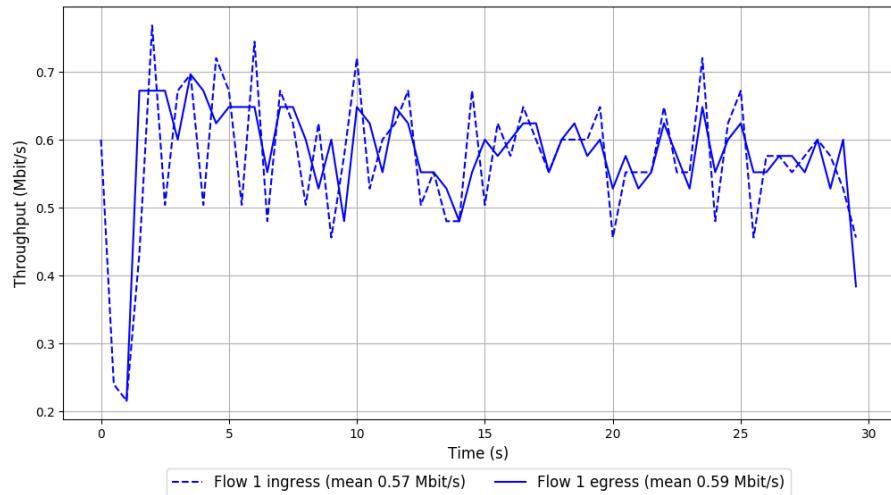


Run 3: Statistics of KohoCC

```
Start at: 2017-08-21 05:02:47
End at: 2017-08-21 05:03:17
Local clock offset: 0.736 ms
Remote clock offset: -2.673 ms

# Below is generated by plot.py at 2017-08-21 06:13:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 374.211 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 374.211 ms
Loss rate: 1.26%
```

Run 3: Report of KohoCC — Data Link

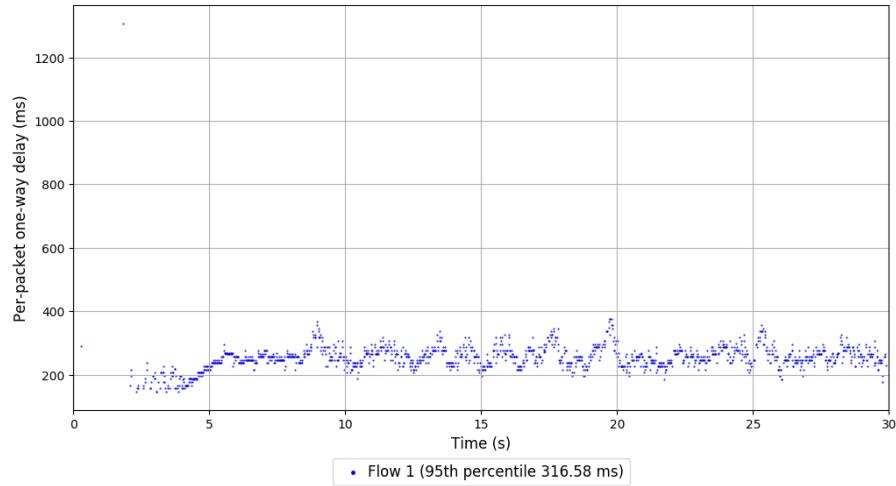
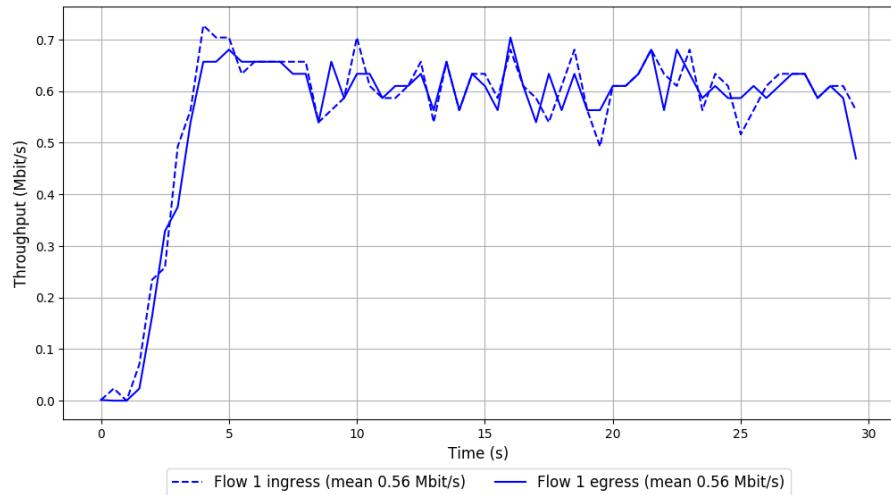


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2017-08-21 04:41:42
End at: 2017-08-21 04:42:12
Local clock offset: 0.888 ms
Remote clock offset: 1.478 ms

# Below is generated by plot.py at 2017-08-21 06:13:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 316.576 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 316.576 ms
Loss rate: 1.25%
```

Run 1: Report of LEDBAT — Data Link

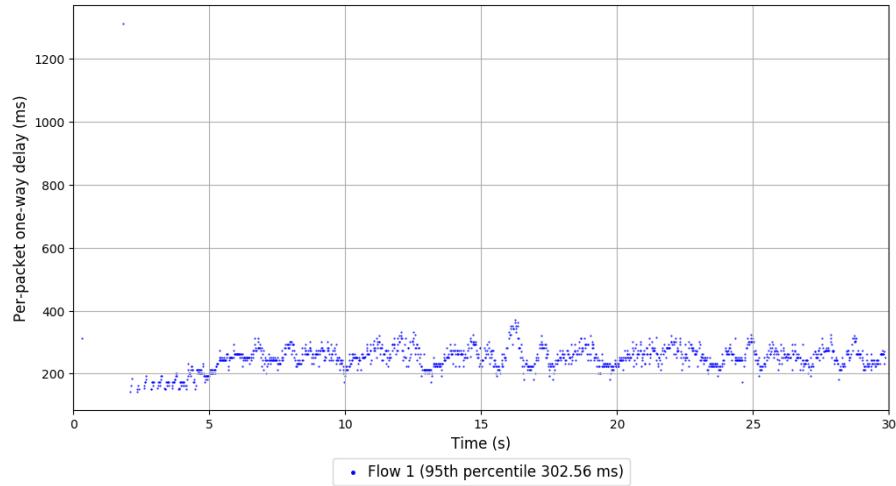
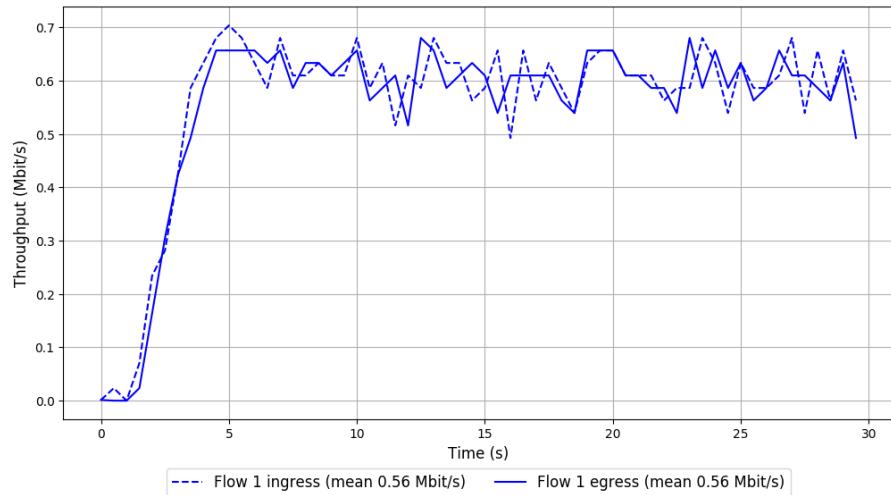


Run 2: Statistics of LEDBAT

```
Start at: 2017-08-21 04:59:16
End at: 2017-08-21 04:59:46
Local clock offset: 0.799 ms
Remote clock offset: 2.205 ms

# Below is generated by plot.py at 2017-08-21 06:13:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 302.557 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 302.557 ms
Loss rate: 1.26%
```

Run 2: Report of LEDBAT — Data Link

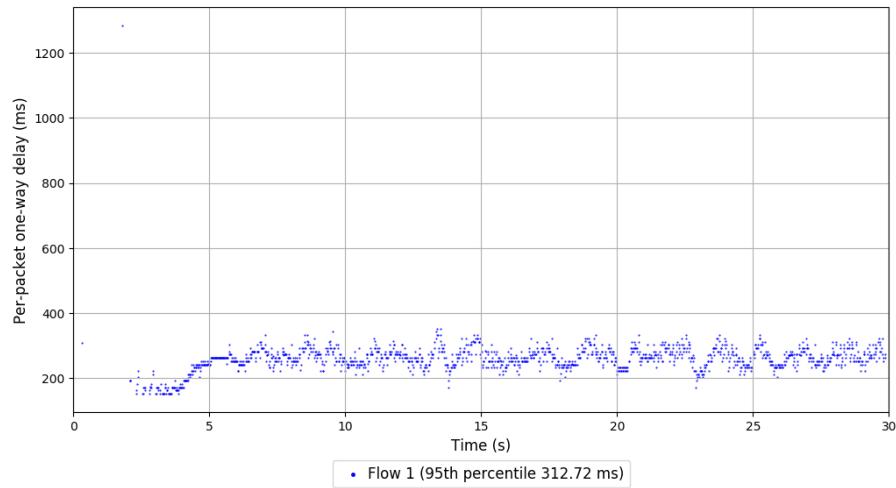
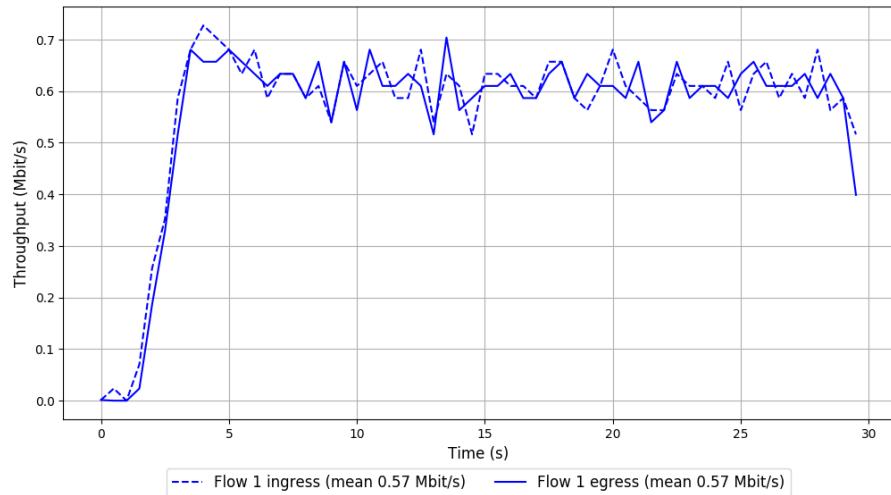


Run 3: Statistics of LEDBAT

```
Start at: 2017-08-21 05:16:50
End at: 2017-08-21 05:17:20
Local clock offset: 0.423 ms
Remote clock offset: -3.769 ms

# Below is generated by plot.py at 2017-08-21 06:13:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 312.724 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 312.724 ms
Loss rate: 1.24%
```

Run 3: Report of LEDBAT — Data Link

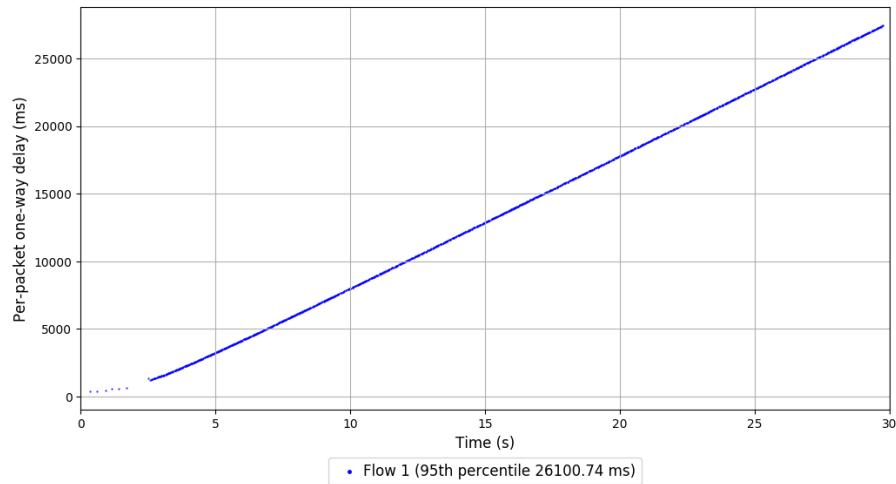
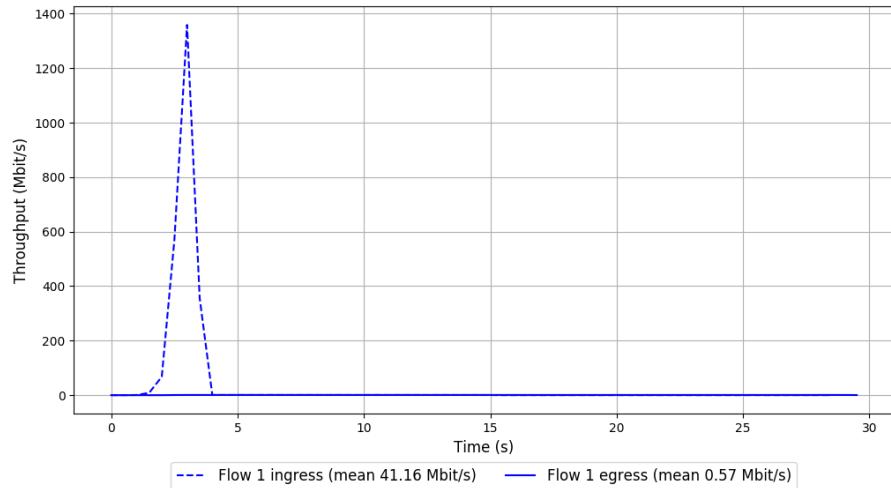


Run 1: Statistics of PCC

```
Start at: 2017-08-21 04:40:30
End at: 2017-08-21 04:41:00
Local clock offset: 0.96 ms
Remote clock offset: -2.446 ms

# Below is generated by plot.py at 2017-08-21 06:13:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26100.739 ms
Loss rate: 98.59%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26100.739 ms
Loss rate: 98.59%
```

Run 1: Report of PCC — Data Link

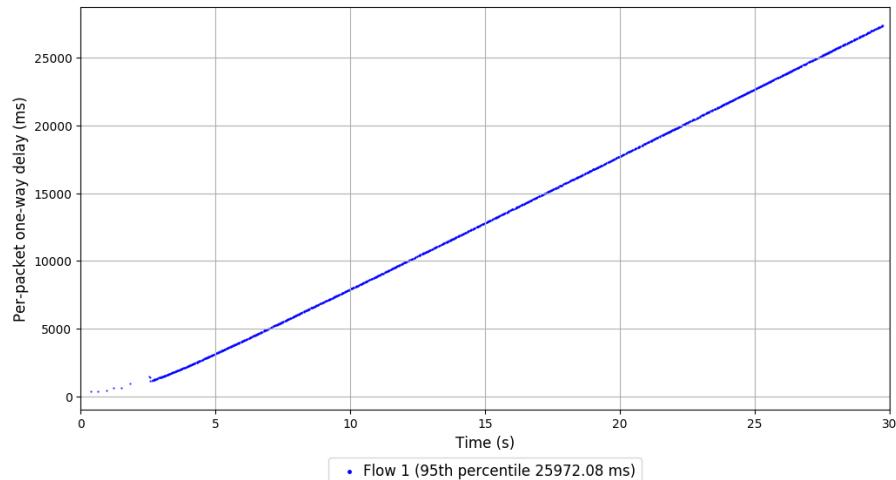
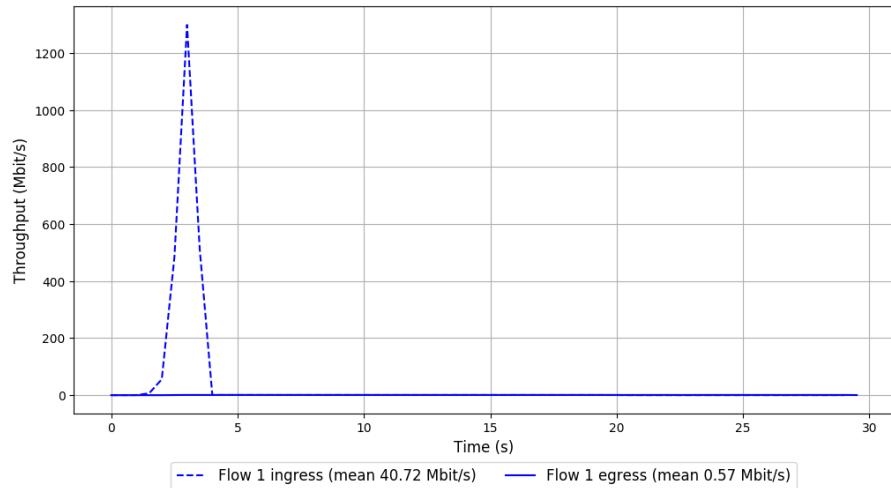


Run 2: Statistics of PCC

```
Start at: 2017-08-21 04:58:05
End at: 2017-08-21 04:58:35
Local clock offset: 0.788 ms
Remote clock offset: 1.323 ms

# Below is generated by plot.py at 2017-08-21 06:13:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 25972.084 ms
Loss rate: 98.59%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 25972.084 ms
Loss rate: 98.59%
```

Run 2: Report of PCC — Data Link

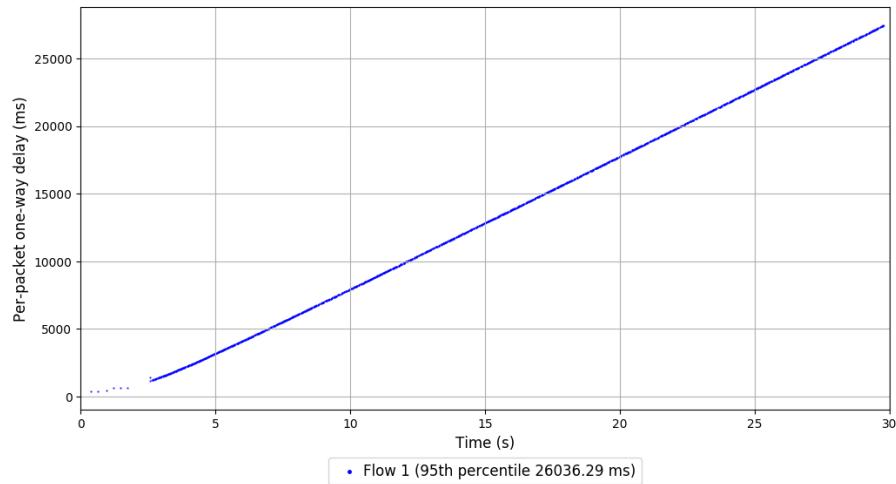
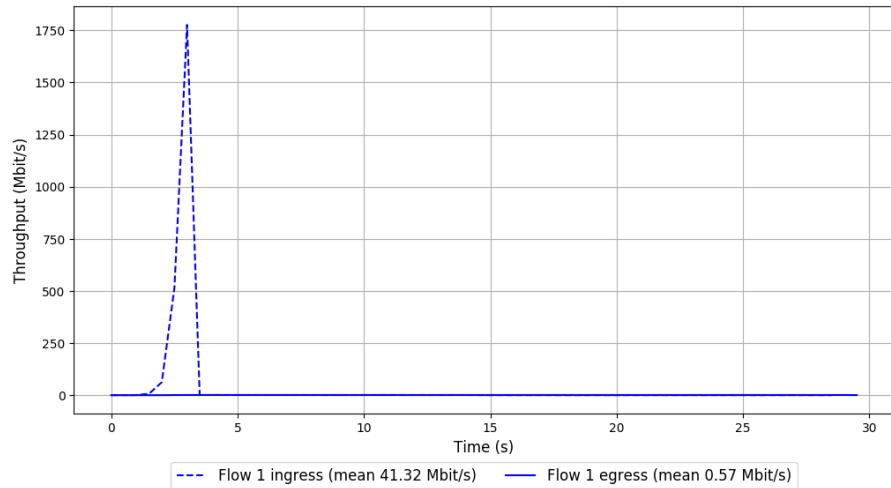


Run 3: Statistics of PCC

```
Start at: 2017-08-21 05:15:38
End at: 2017-08-21 05:16:08
Local clock offset: 0.448 ms
Remote clock offset: -2.838 ms

# Below is generated by plot.py at 2017-08-21 06:13:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26036.291 ms
Loss rate: 98.59%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26036.291 ms
Loss rate: 98.59%
```

Run 3: Report of PCC — Data Link

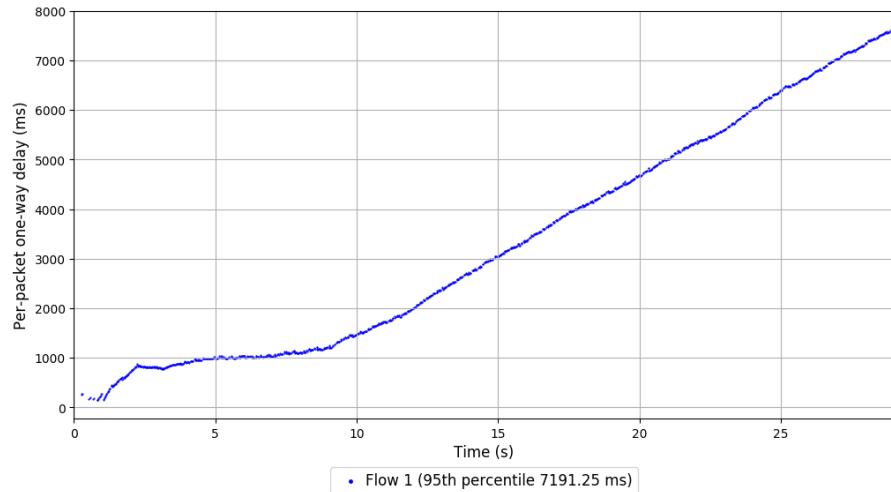
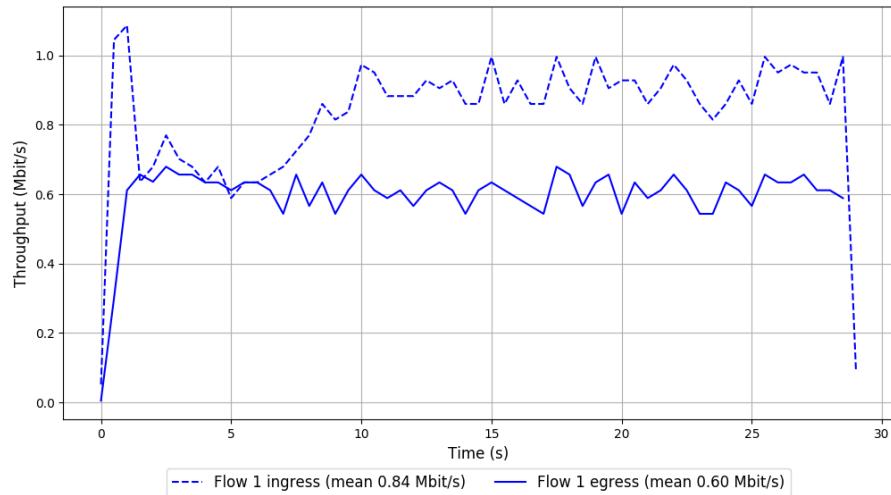


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2017-08-21 04:28:47
End at: 2017-08-21 04:29:17
Local clock offset: 1.063 ms
Remote clock offset: 2.467 ms

# Below is generated by plot.py at 2017-08-21 06:13:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 7191.253 ms
Loss rate: 29.34%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 7191.253 ms
Loss rate: 29.34%
```

Run 1: Report of QUIC Cubic — Data Link

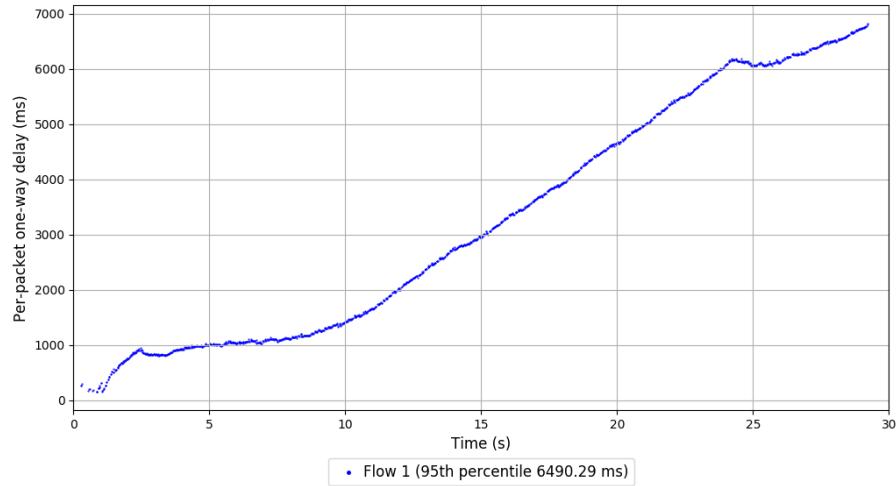
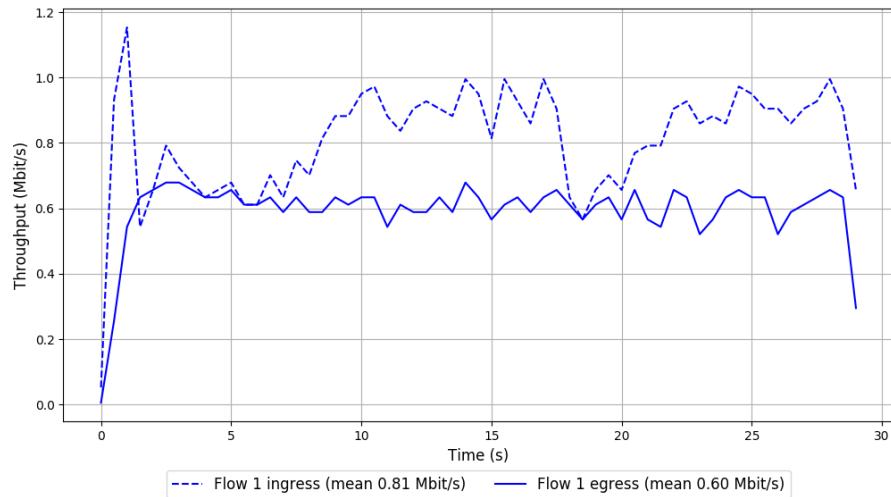


Run 2: Statistics of QUIC Cubic

```
Start at: 2017-08-21 04:46:22
End at: 2017-08-21 04:46:52
Local clock offset: 0.852 ms
Remote clock offset: 2.381 ms

# Below is generated by plot.py at 2017-08-21 06:13:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 6490.294 ms
Loss rate: 26.81%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 6490.294 ms
Loss rate: 26.81%
```

Run 2: Report of QUIC Cubic — Data Link

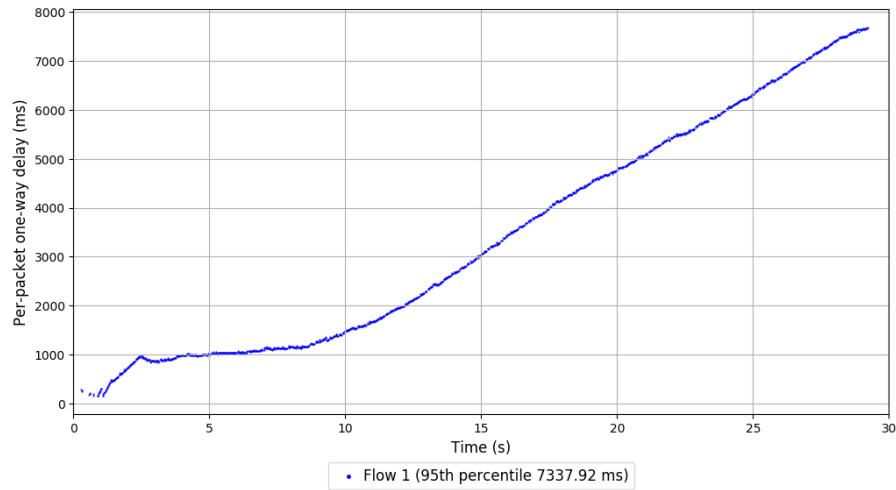
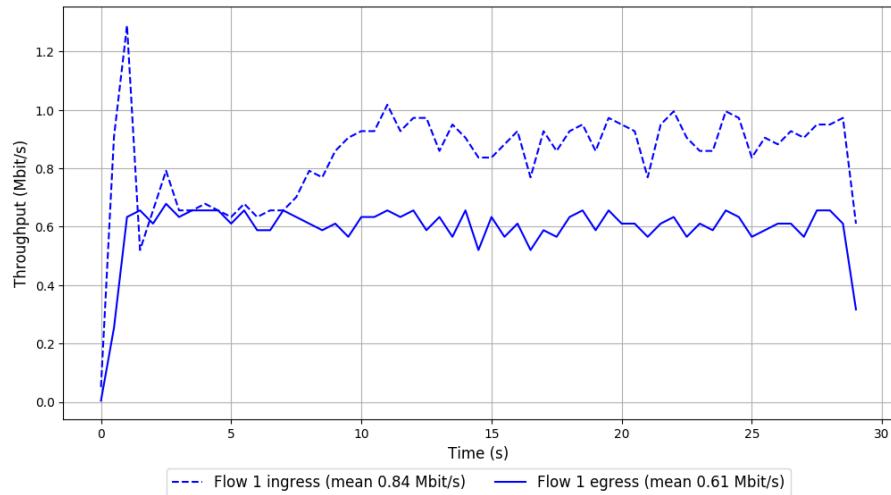


Run 3: Statistics of QUIC Cubic

```
Start at: 2017-08-21 05:03:57
End at: 2017-08-21 05:04:27
Local clock offset: 0.686 ms
Remote clock offset: -3.577 ms

# Below is generated by plot.py at 2017-08-21 06:13:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 7337.919 ms
Loss rate: 29.26%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 7337.919 ms
Loss rate: 29.26%
```

Run 3: Report of QUIC Cubic — Data Link

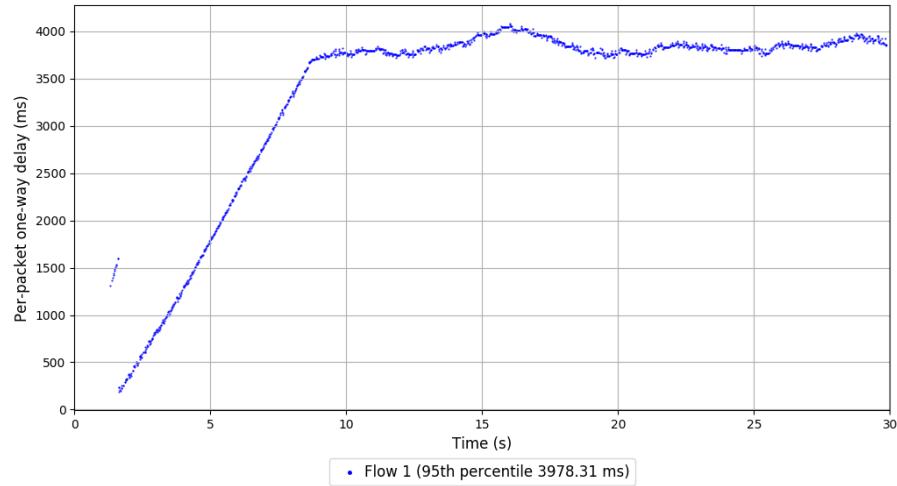
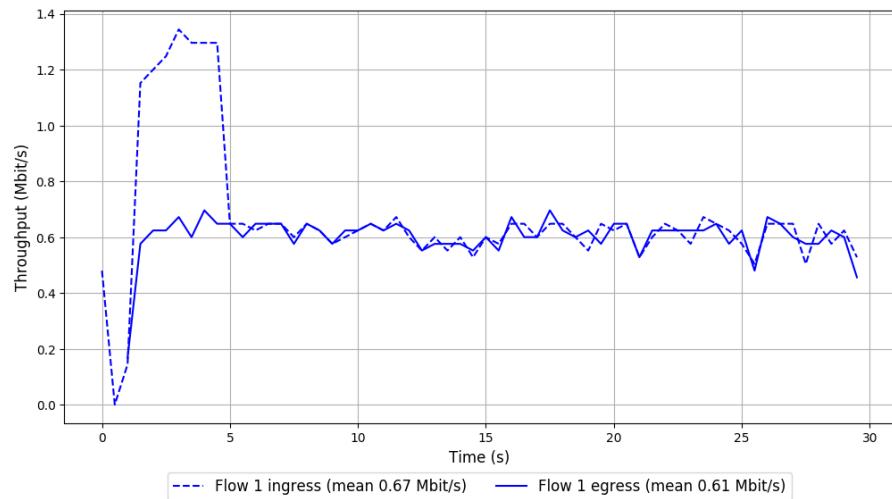


```
Run 1: Statistics of Saturator
```

```
Start at: 2017-08-21 04:44:02
End at: 2017-08-21 04:44:32
Local clock offset: 0.915 ms
Remote clock offset: -2.521 ms

# Below is generated by plot.py at 2017-08-21 06:13:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 3978.314 ms
Loss rate: 12.42%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 3978.314 ms
Loss rate: 12.42%
```

Run 1: Report of Saturator — Data Link

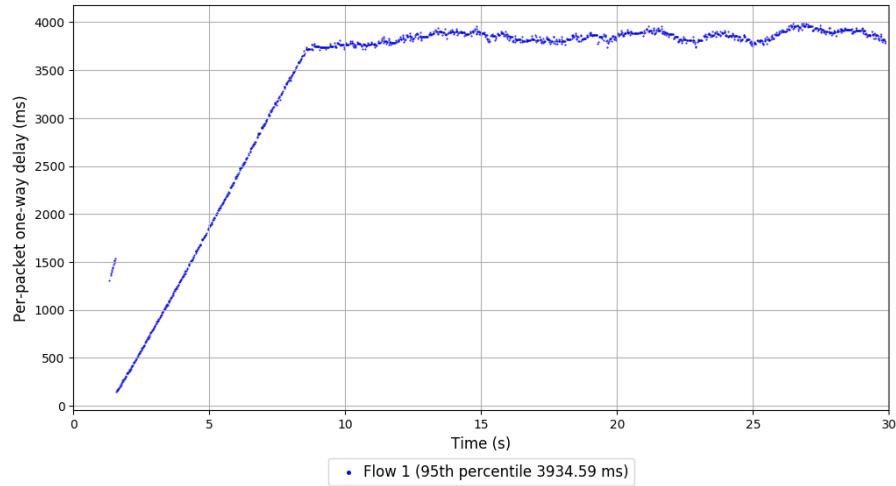
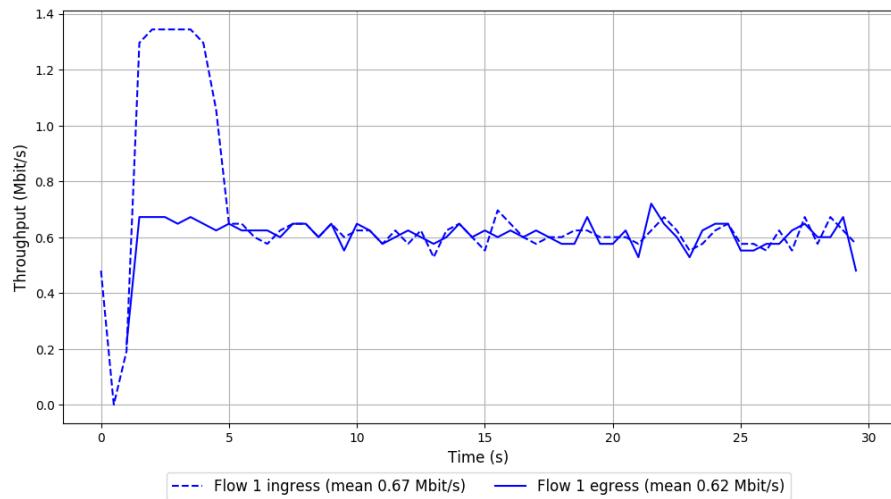


Run 2: Statistics of Saturator

```
Start at: 2017-08-21 05:01:37
End at: 2017-08-21 05:02:07
Local clock offset: 0.742 ms
Remote clock offset: 1.237 ms

# Below is generated by plot.py at 2017-08-21 06:13:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 3934.595 ms
Loss rate: 12.36%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 3934.595 ms
Loss rate: 12.36%
```

Run 2: Report of Saturator — Data Link

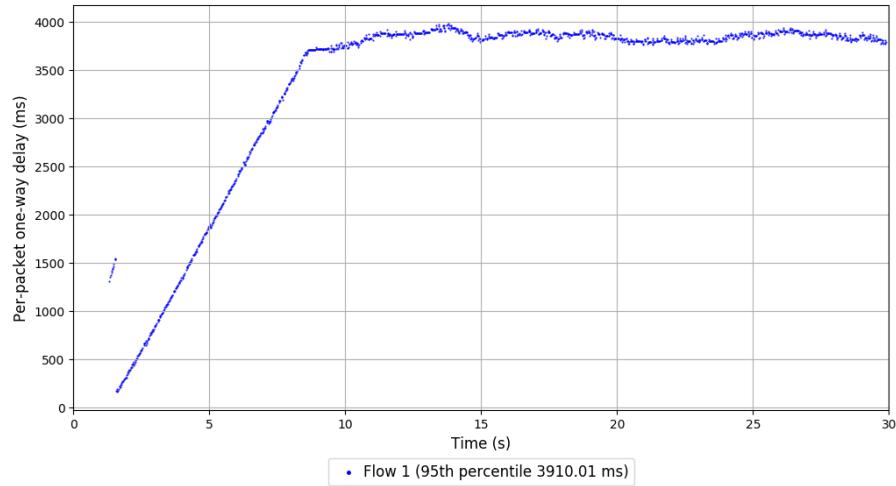
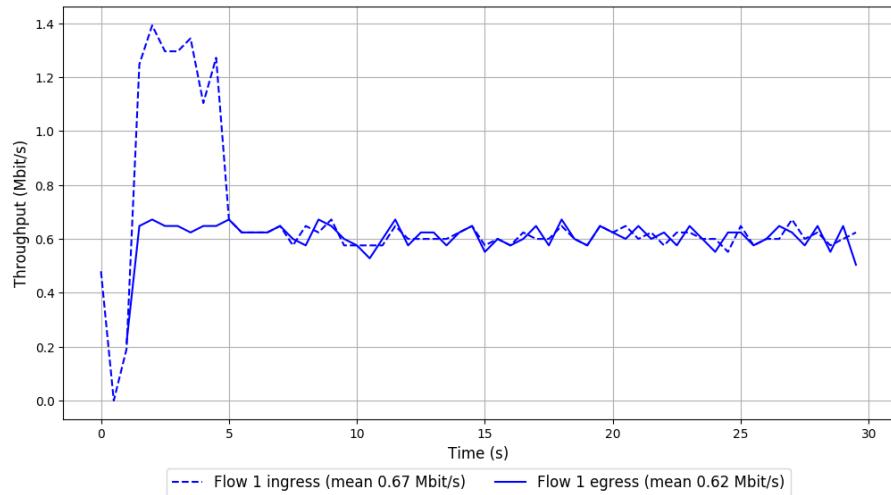


Run 3: Statistics of Saturator

```
Start at: 2017-08-21 05:19:10
End at: 2017-08-21 05:19:40
Local clock offset: 0.382 ms
Remote clock offset: -3.725 ms

# Below is generated by plot.py at 2017-08-21 06:13:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 3910.009 ms
Loss rate: 12.36%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 3910.009 ms
Loss rate: 12.36%
```

Run 3: Report of Saturator — Data Link

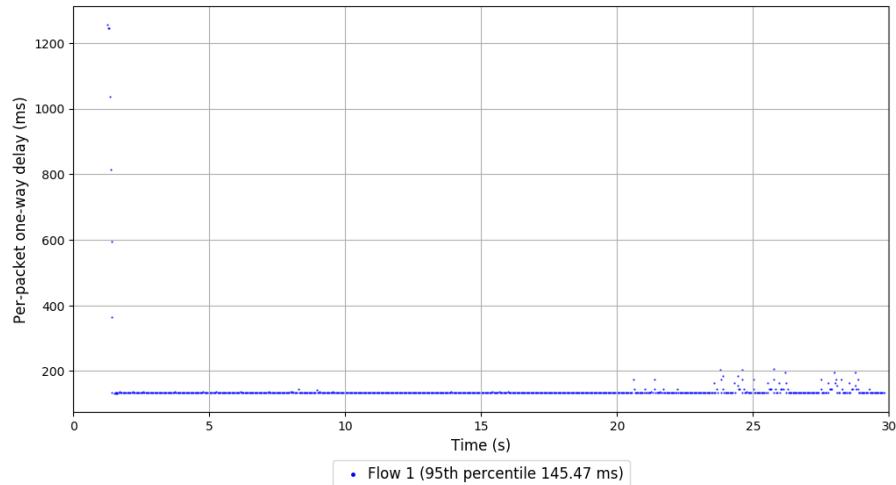
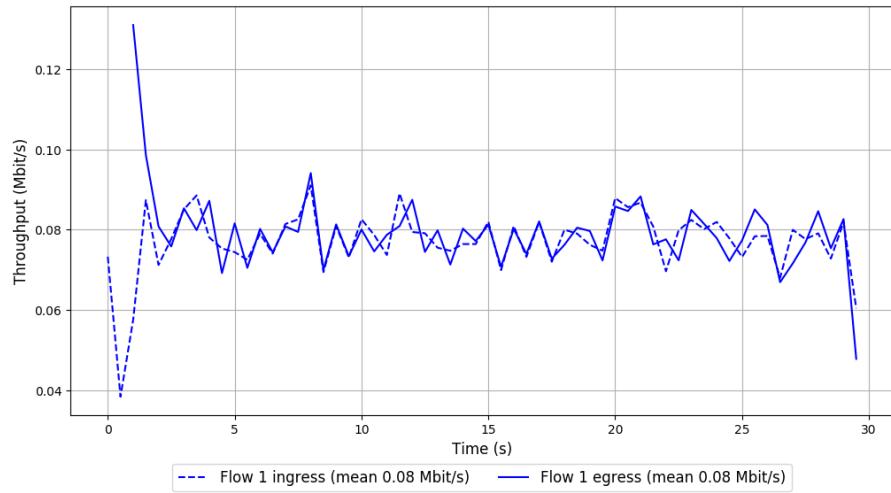


Run 1: Statistics of SCReAM

```
Start at: 2017-08-21 04:29:57
End at: 2017-08-21 04:30:27
Local clock offset: 1.07 ms
Remote clock offset: 2.395 ms

# Below is generated by plot.py at 2017-08-21 06:13:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 145.475 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 145.475 ms
Loss rate: 0.66%
```

Run 1: Report of SCReAM — Data Link

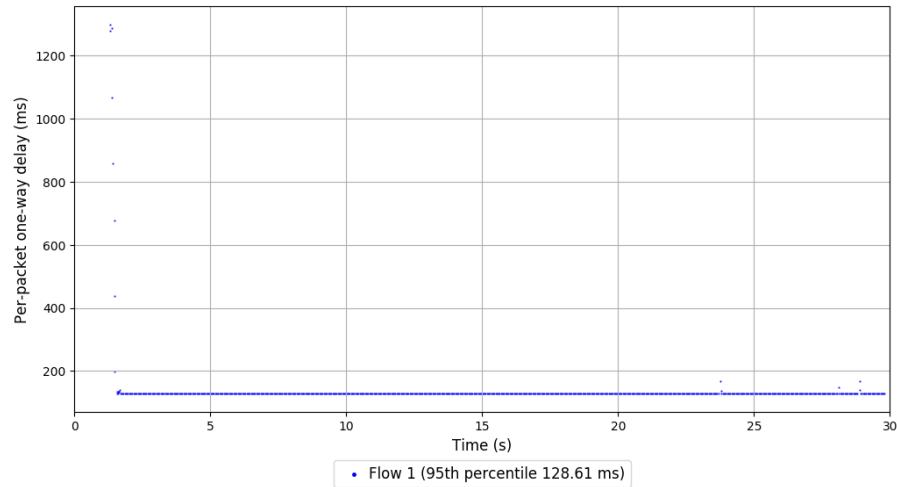
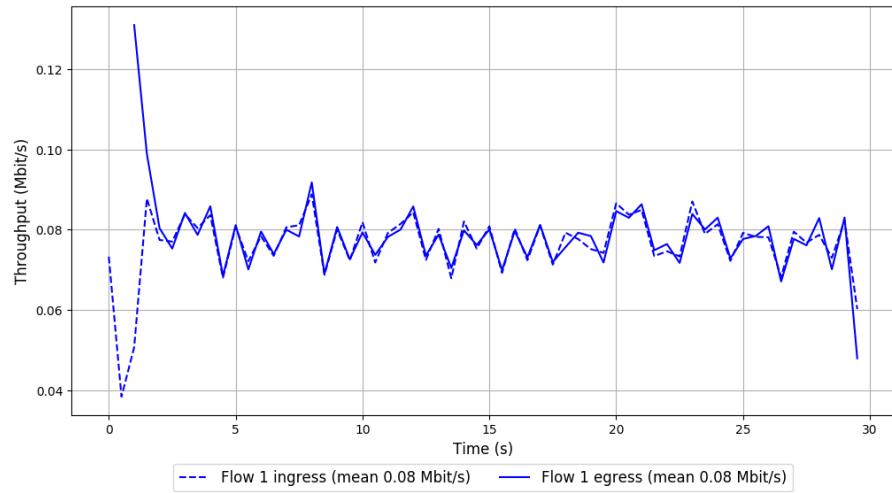


Run 2: Statistics of SCReAM

```
Start at: 2017-08-21 04:47:32
End at: 2017-08-21 04:48:02
Local clock offset: 0.836 ms
Remote clock offset: 1.406 ms

# Below is generated by plot.py at 2017-08-21 06:13:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 128.606 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 128.606 ms
Loss rate: 0.66%
```

Run 2: Report of SCReAM — Data Link

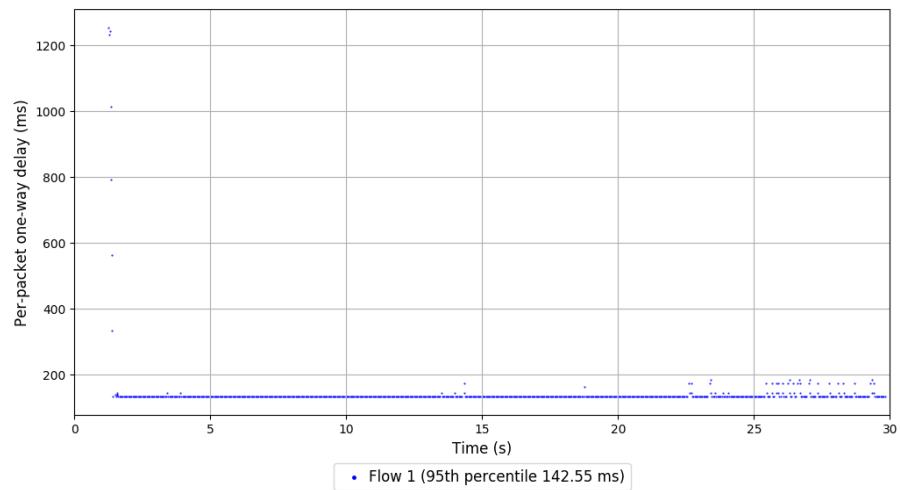
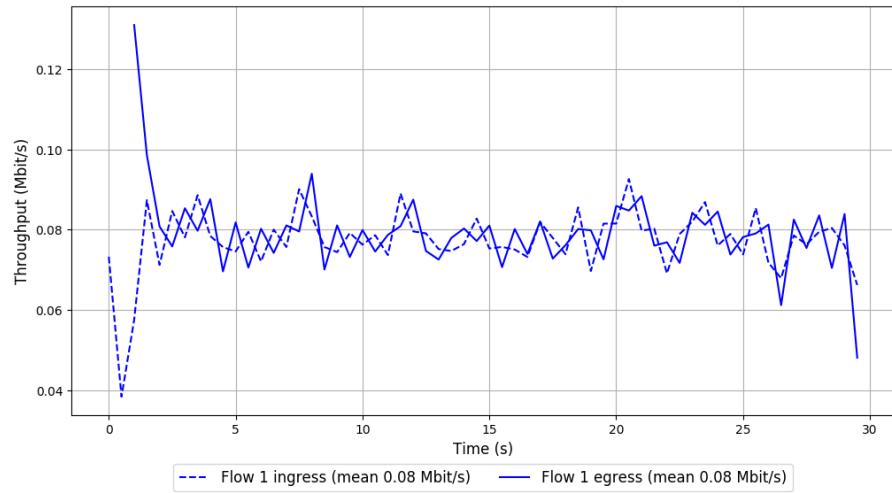


Run 3: Statistics of SCReAM

```
Start at: 2017-08-21 05:05:07
End at: 2017-08-21 05:05:37
Local clock offset: 0.674 ms
Remote clock offset: -2.766 ms

# Below is generated by plot.py at 2017-08-21 06:13:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 142.550 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 142.550 ms
Loss rate: 0.78%
```

Run 3: Report of SCReAM — Data Link

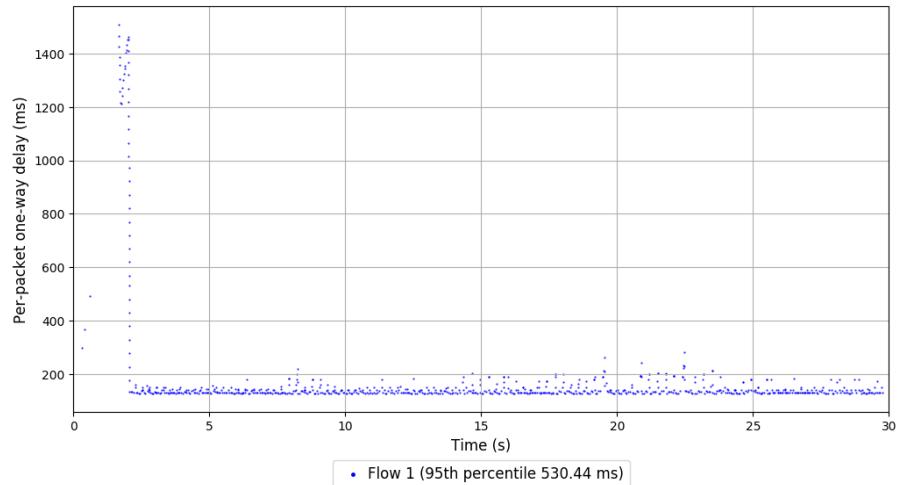
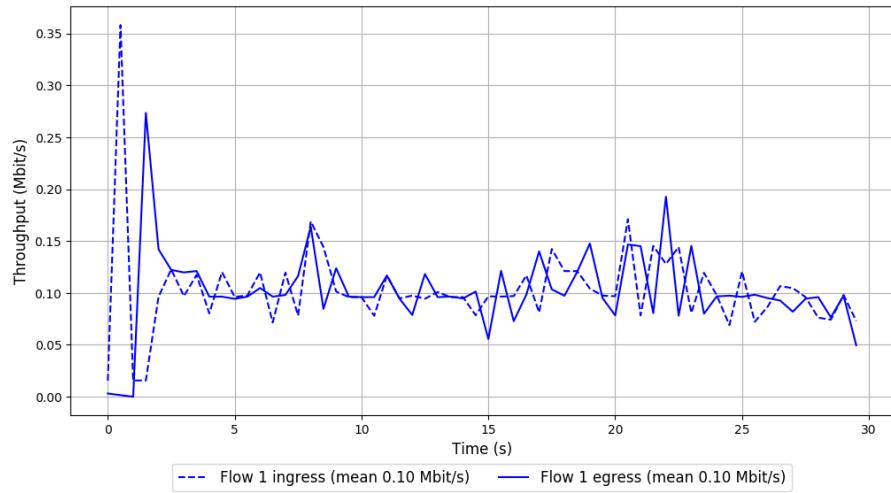


Run 1: Statistics of Sprout

```
Start at: 2017-08-21 04:32:18
End at: 2017-08-21 04:32:48
Local clock offset: 1.034 ms
Remote clock offset: 0.638 ms

# Below is generated by plot.py at 2017-08-21 06:13:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 530.443 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 530.443 ms
Loss rate: 1.34%
```

Run 1: Report of Sprout — Data Link

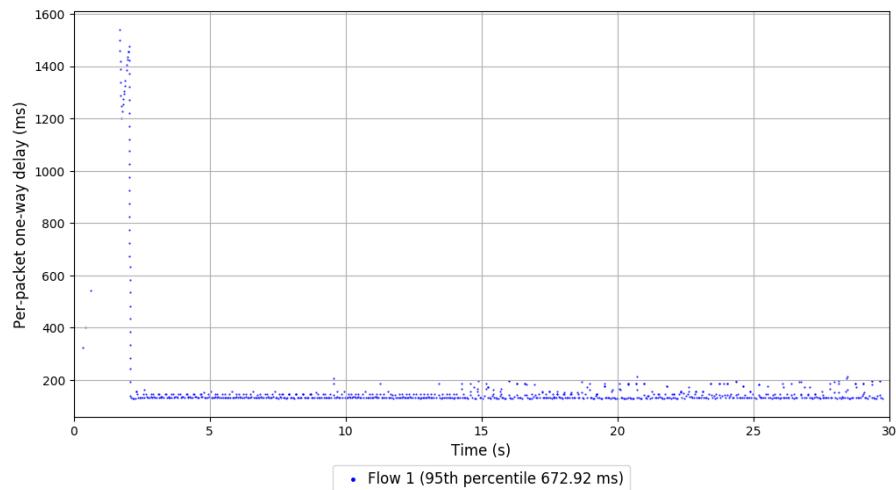
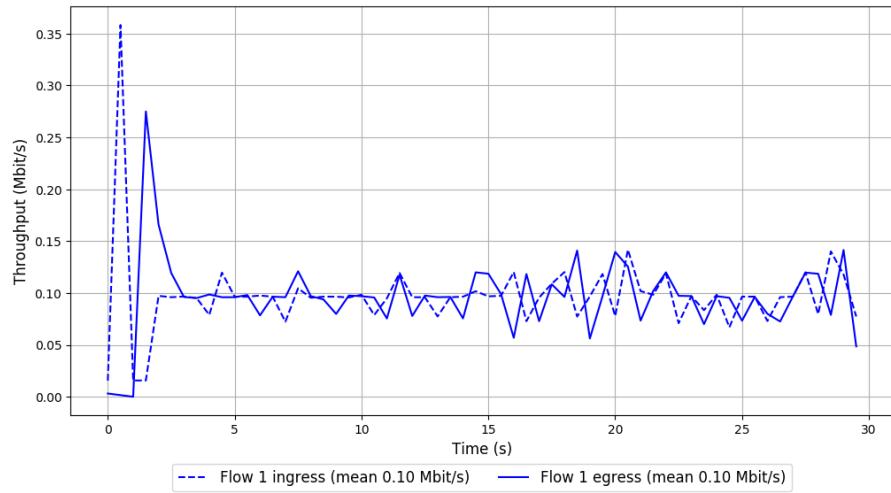


Run 2: Statistics of Sprout

```
Start at: 2017-08-21 04:49:53
End at: 2017-08-21 04:50:23
Local clock offset: 0.82 ms
Remote clock offset: 1.365 ms

# Below is generated by plot.py at 2017-08-21 06:13:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 672.919 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 672.919 ms
Loss rate: 1.43%
```

Run 2: Report of Sprout — Data Link

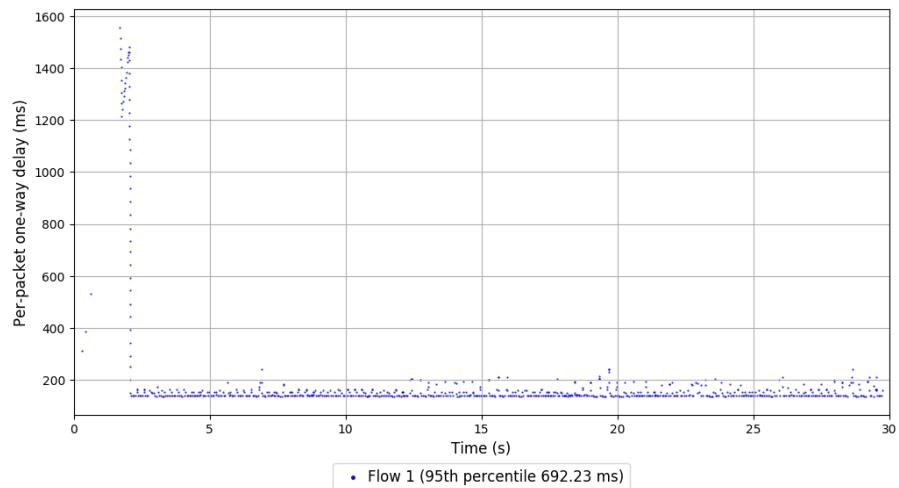
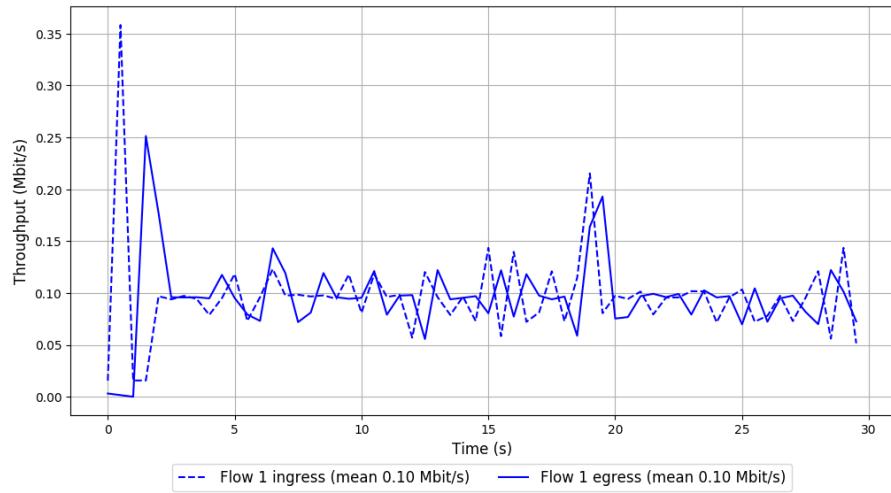


Run 3: Statistics of Sprout

```
Start at: 2017-08-21 05:07:28
End at: 2017-08-21 05:07:58
Local clock offset: 0.635 ms
Remote clock offset: -2.724 ms

# Below is generated by plot.py at 2017-08-21 06:13:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 692.228 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 692.228 ms
Loss rate: 0.83%
```

Run 3: Report of Sprout — Data Link

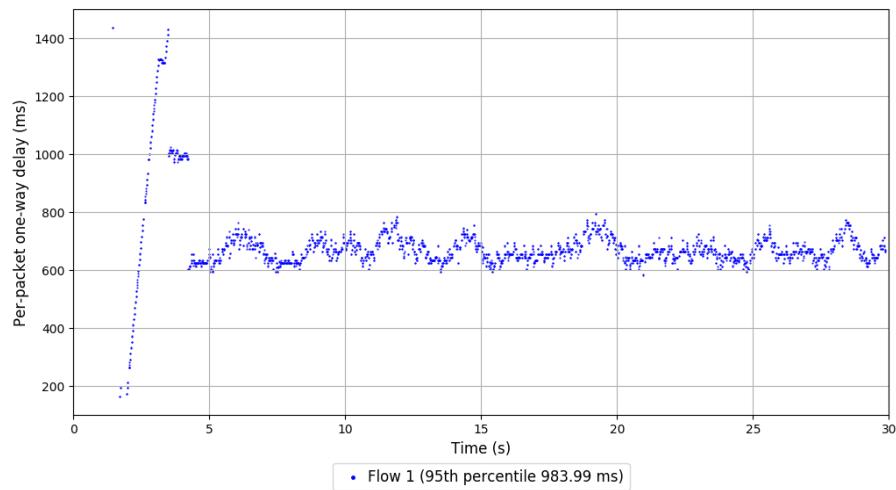
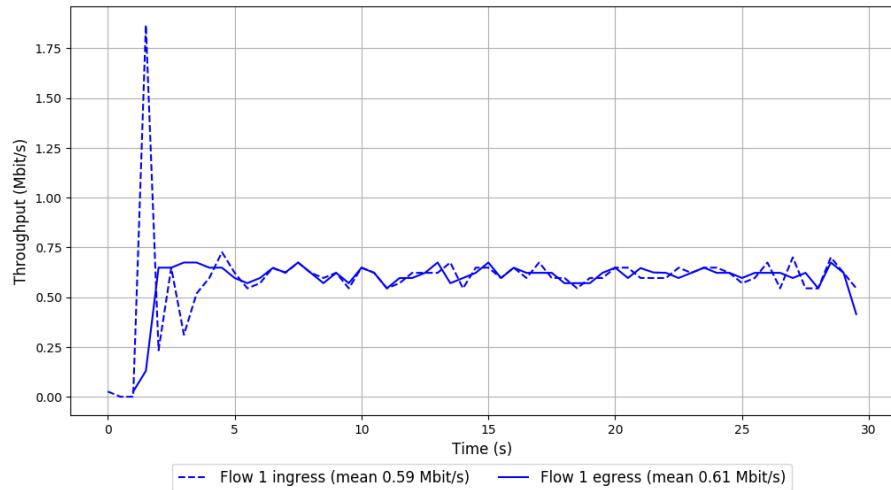


Run 1: Statistics of TaoVA-100x

```
Start at: 2017-08-21 04:34:38
End at: 2017-08-21 04:35:08
Local clock offset: 0.926 ms
Remote clock offset: -3.343 ms

# Below is generated by plot.py at 2017-08-21 06:13:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 983.993 ms
Loss rate: 2.63%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 983.993 ms
Loss rate: 2.63%
```

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

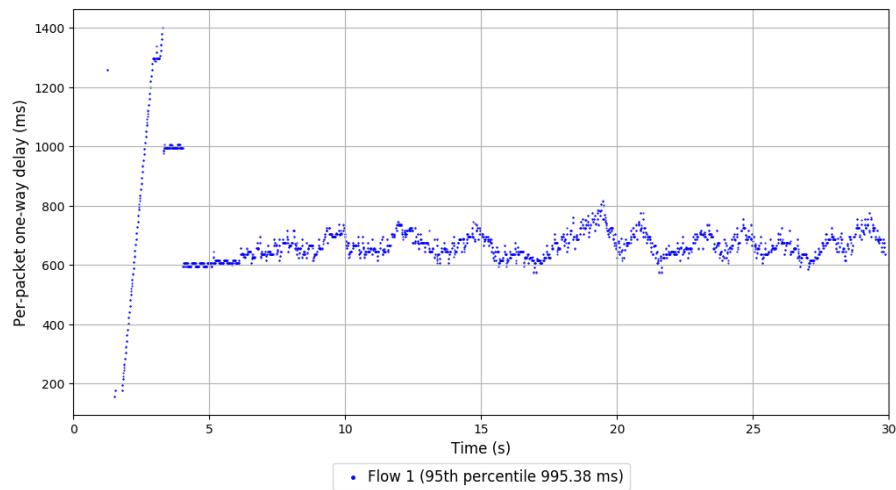
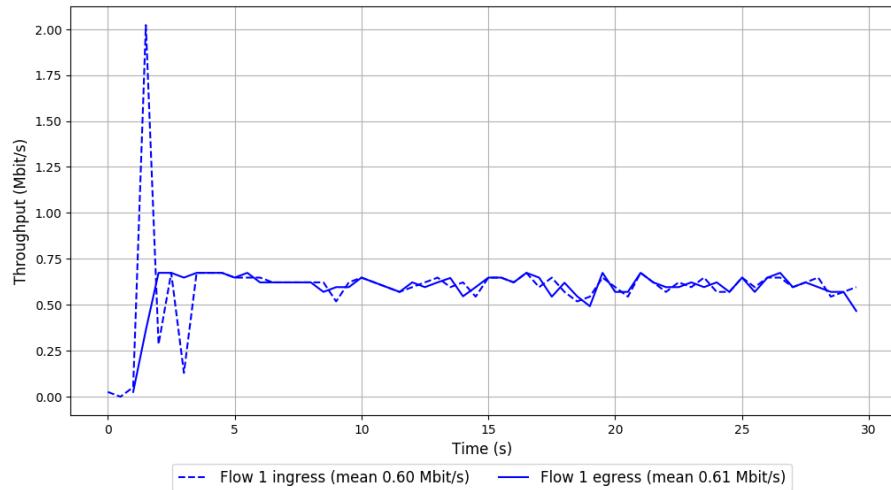


Run 2: Statistics of TaoVA-100x

```
Start at: 2017-08-21 04:52:13
End at: 2017-08-21 04:52:43
Local clock offset: 0.854 ms
Remote clock offset: -2.599 ms

# Below is generated by plot.py at 2017-08-21 06:13:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 995.379 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 995.379 ms
Loss rate: 2.61%
```

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

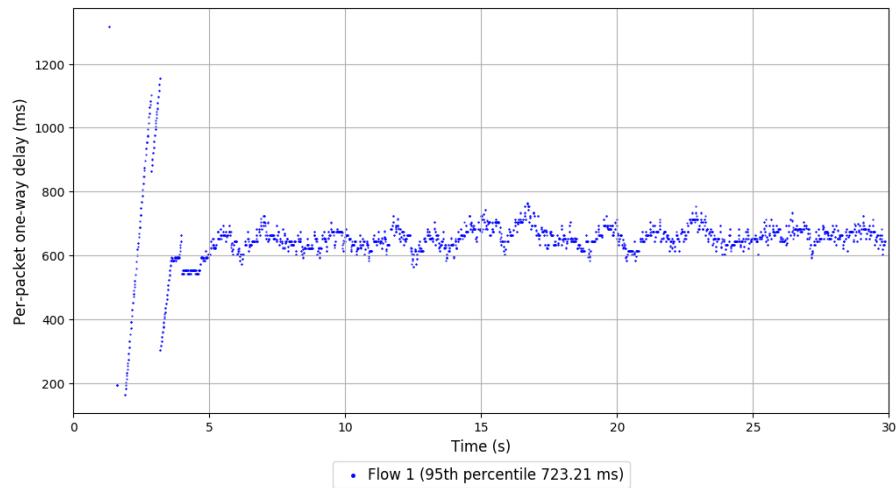
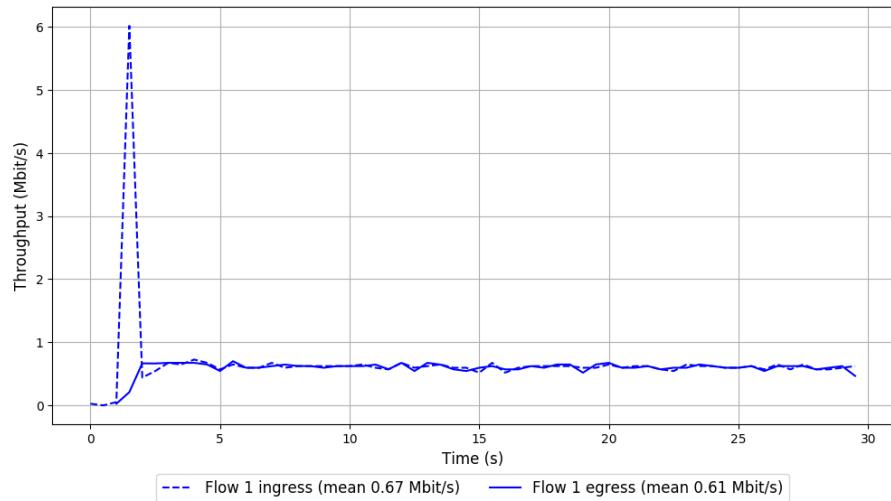


Run 3: Statistics of TaoVA-100x

```
Start at: 2017-08-21 05:09:48
End at: 2017-08-21 05:10:18
Local clock offset: 0.558 ms
Remote clock offset: 1.142 ms

# Below is generated by plot.py at 2017-08-21 06:13:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 723.208 ms
Loss rate: 14.09%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 723.208 ms
Loss rate: 14.09%
```

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

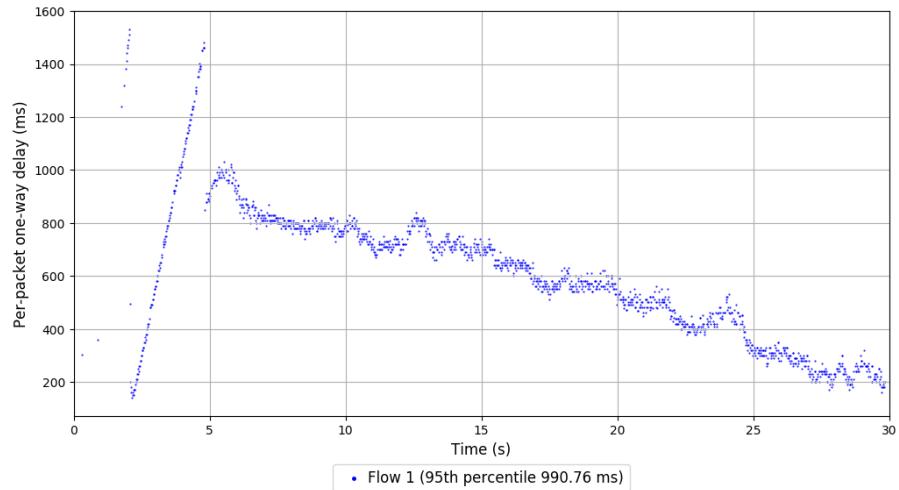
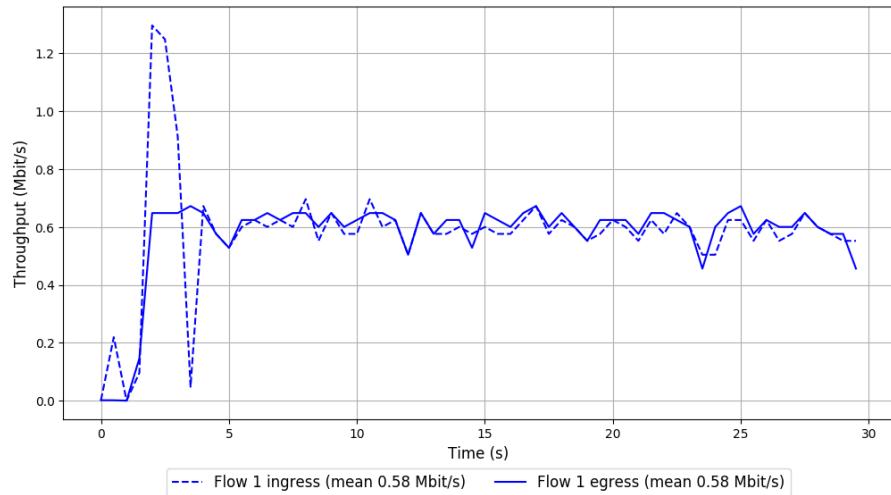


Run 1: Statistics of TCP Vegas

```
Start at: 2017-08-21 04:33:28
End at: 2017-08-21 04:33:58
Local clock offset: 0.886 ms
Remote clock offset: 2.415 ms

# Below is generated by plot.py at 2017-08-21 06:13:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 990.765 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 990.765 ms
Loss rate: 1.04%
```

Run 1: Report of TCP Vegas — Data Link

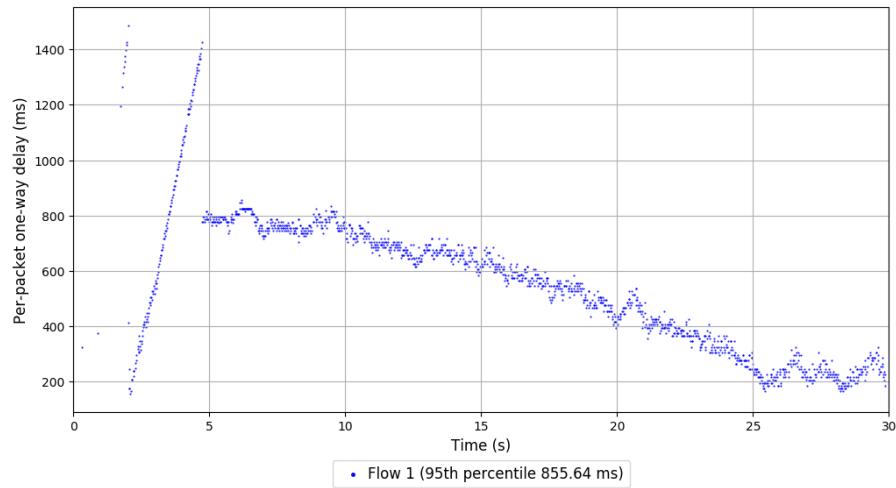
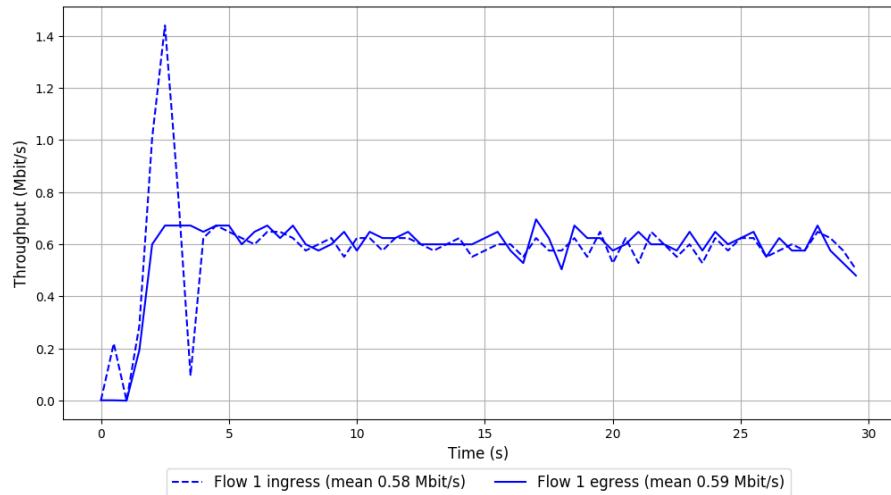


Run 2: Statistics of TCP Vegas

```
Start at: 2017-08-21 04:51:03
End at: 2017-08-21 04:51:33
Local clock offset: 0.861 ms
Remote clock offset: -2.621 ms

# Below is generated by plot.py at 2017-08-21 06:13:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 855.639 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 855.639 ms
Loss rate: 1.03%
```

Run 2: Report of TCP Vegas — Data Link

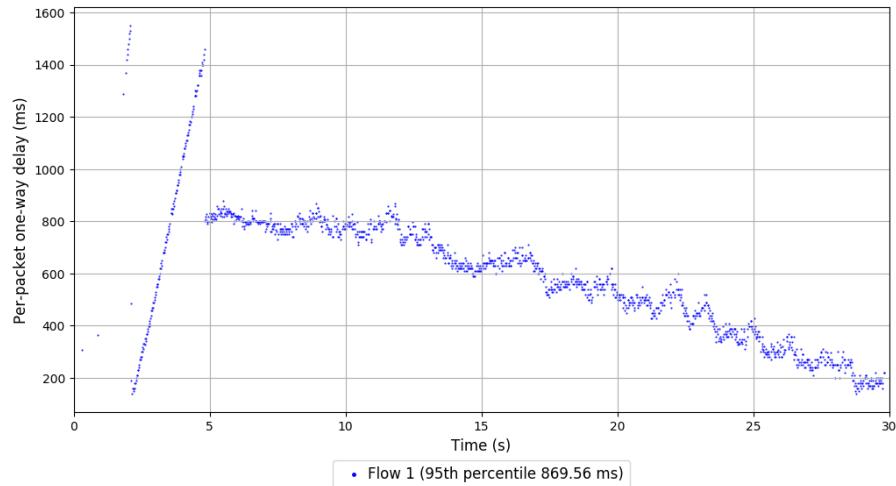
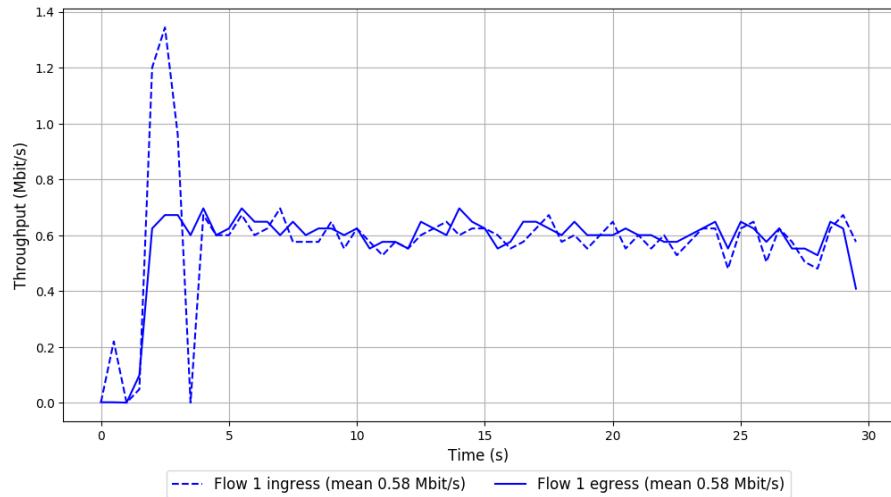


Run 3: Statistics of TCP Vegas

```
Start at: 2017-08-21 05:08:38
End at: 2017-08-21 05:09:08
Local clock offset: 0.565 ms
Remote clock offset: 2.066 ms

# Below is generated by plot.py at 2017-08-21 06:13:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 869.556 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 869.556 ms
Loss rate: 1.24%
```

Run 3: Report of TCP Vegas — Data Link

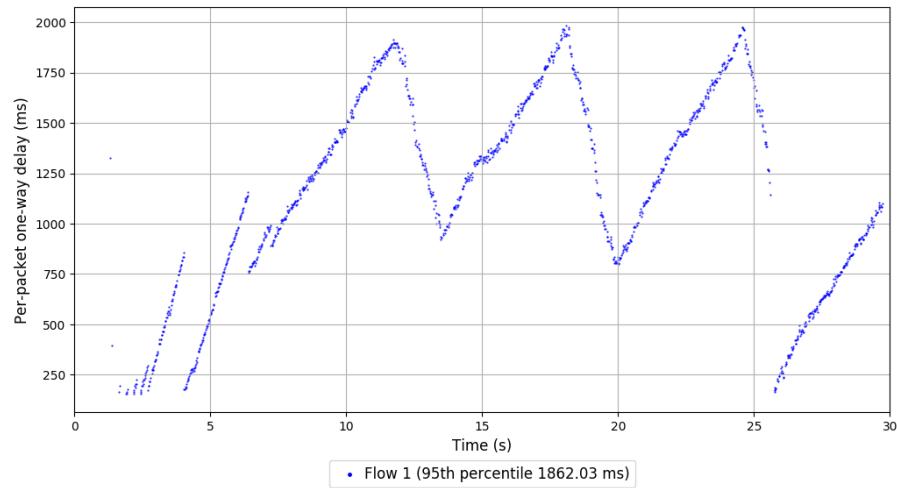
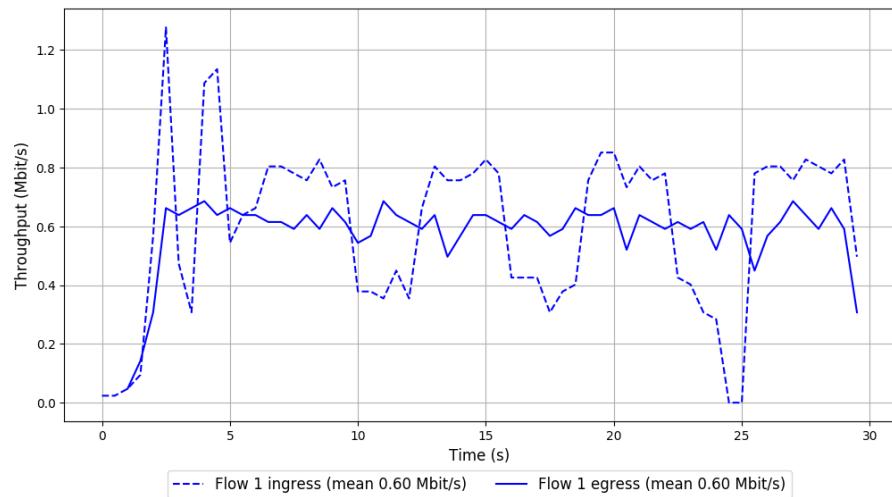


Run 1: Statistics of Verus

```
Start at: 2017-08-21 04:36:59
End at: 2017-08-21 04:37:29
Local clock offset: 1.004 ms
Remote clock offset: 2.407 ms

# Below is generated by plot.py at 2017-08-21 06:13:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1862.028 ms
Loss rate: 5.28%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1862.028 ms
Loss rate: 5.28%
```

Run 1: Report of Verus — Data Link

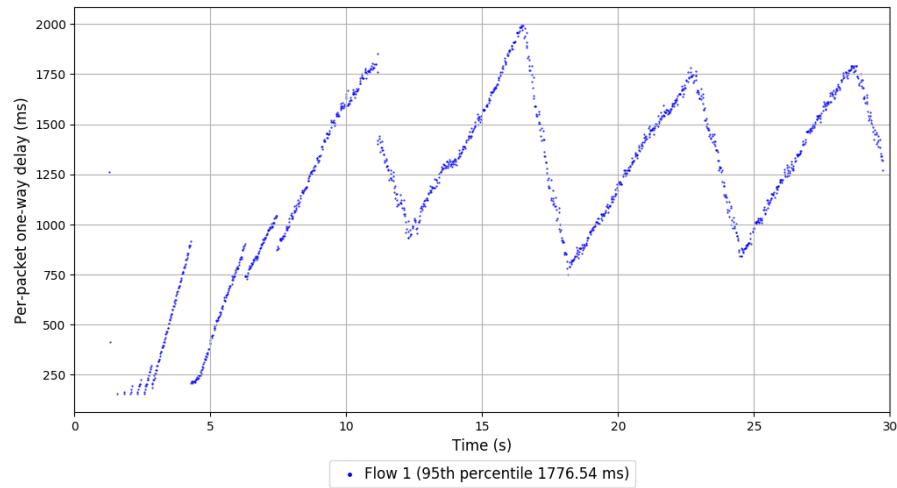
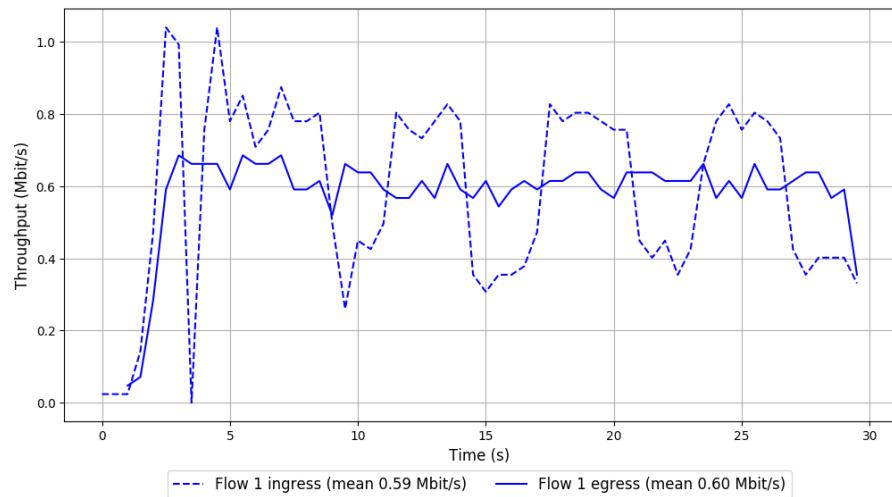


Run 2: Statistics of Verus

```
Start at: 2017-08-21 04:54:34
End at: 2017-08-21 04:55:04
Local clock offset: 0.846 ms
Remote clock offset: 1.3 ms

# Below is generated by plot.py at 2017-08-21 06:13:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1776.537 ms
Loss rate: 3.30%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1776.537 ms
Loss rate: 3.30%
```

Run 2: Report of Verus — Data Link

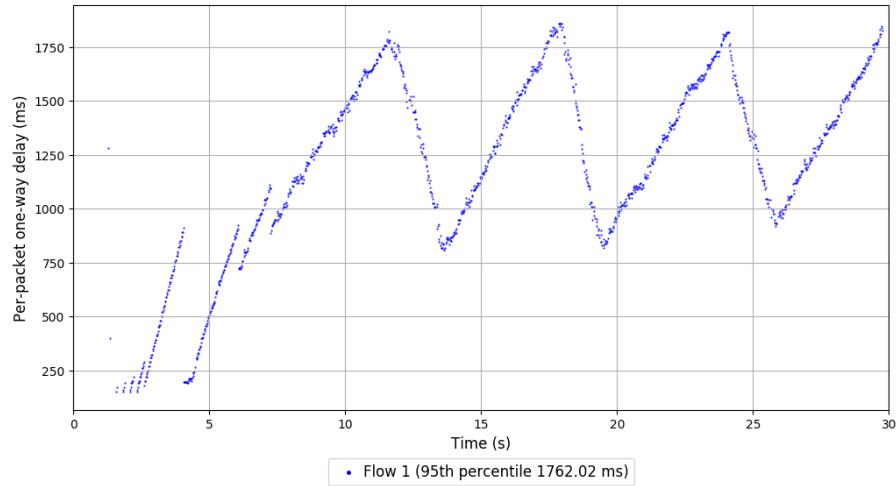
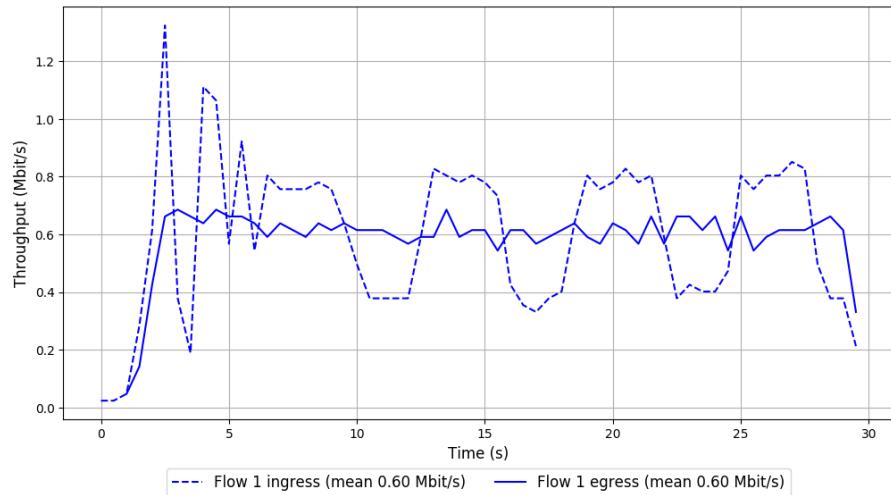


Run 3: Statistics of Verus

```
Start at: 2017-08-21 05:12:08
End at: 2017-08-21 05:12:38
Local clock offset: 0.473 ms
Remote clock offset: 0.272 ms

# Below is generated by plot.py at 2017-08-21 06:13:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1762.015 ms
Loss rate: 4.41%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1762.015 ms
Loss rate: 4.41%
```

Run 3: Report of Verus — Data Link

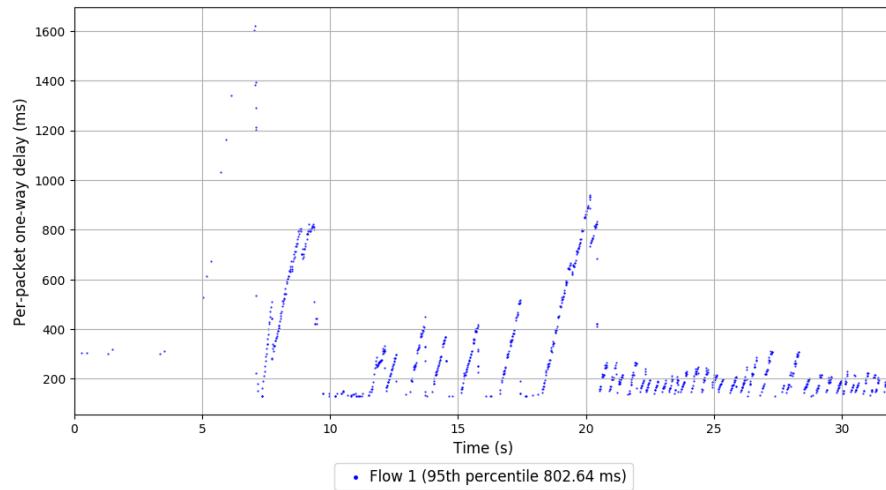
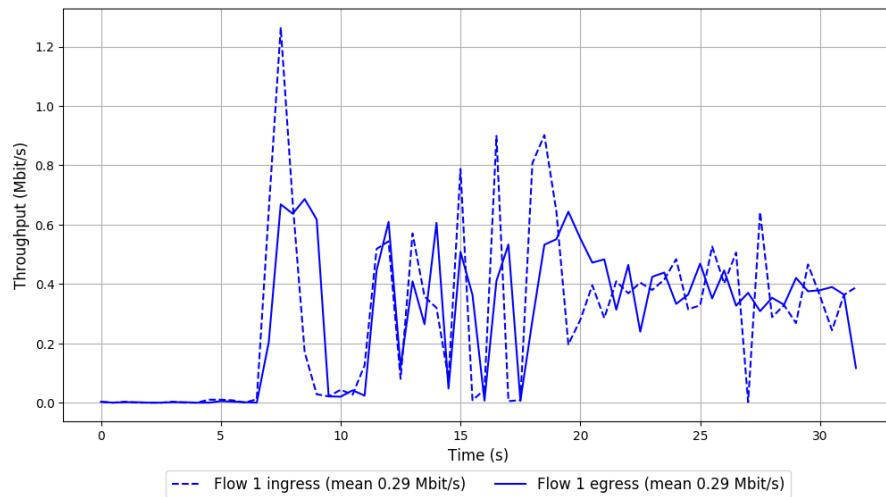


Run 1: Statistics of WebRTC media

```
Start at: 2017-08-21 04:35:48
End at: 2017-08-21 04:36:18
Local clock offset: 0.994 ms
Remote clock offset: -2.445 ms

# Below is generated by plot.py at 2017-08-21 06:13:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 802.639 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 802.639 ms
Loss rate: 1.67%
```

Run 1: Report of WebRTC media — Data Link

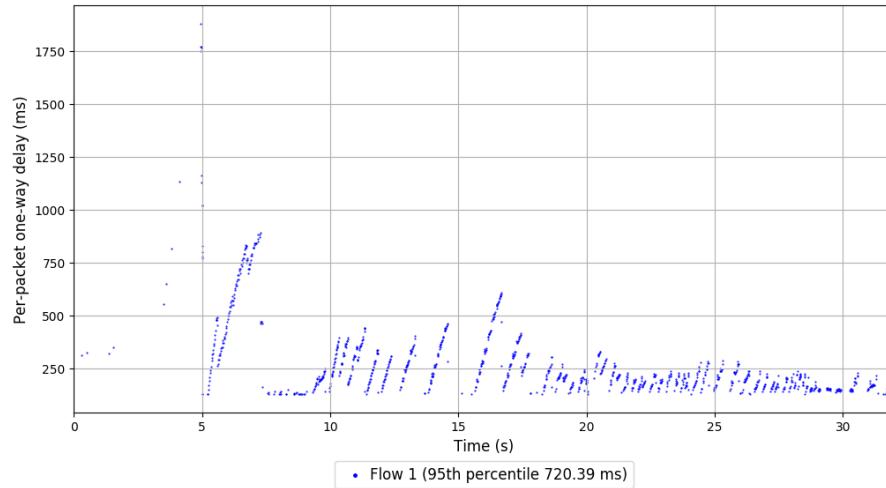
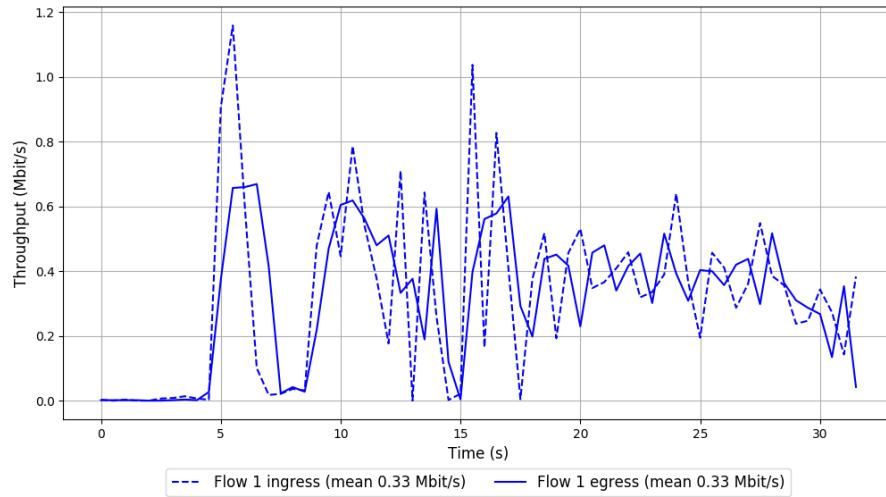


Run 2: Statistics of WebRTC media

```
Start at: 2017-08-21 04:53:24
End at: 2017-08-21 04:53:54
Local clock offset: 0.841 ms
Remote clock offset: 0.472 ms

# Below is generated by plot.py at 2017-08-21 06:13:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 720.389 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 720.389 ms
Loss rate: 1.66%
```

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

```
Start at: 2017-08-21 05:10:58
End at: 2017-08-21 05:11:28
Local clock offset: 0.461 ms
Remote clock offset: 2.06 ms

# Below is generated by plot.py at 2017-08-21 06:13:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 714.996 ms
Loss rate: 2.34%
-- Flow 1:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 714.996 ms
Loss rate: 2.34%
```

Run 3: Report of WebRTC media — Data Link

