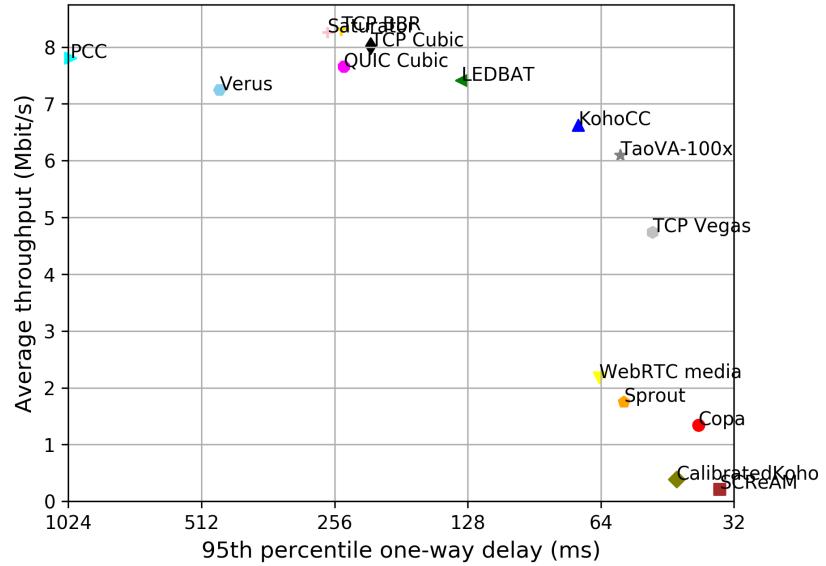


Pantheon Report

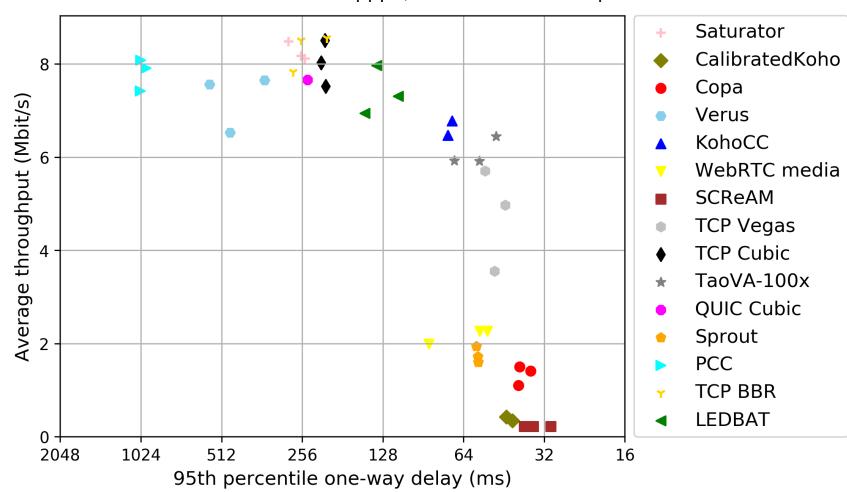
Generated at 2017-08-21 01:37:46 (UTC).
Data path: AWS India 1 Ethernet (*local*) → India ppp0 (*remote*).
Repeated the test of 15 congestion control schemes 3 times.
Each test lasted for 30 seconds running 1 flow.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).
NTP offsets were measured against **nets.org.sg** 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 AWS India 1 Ethernet to India ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



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



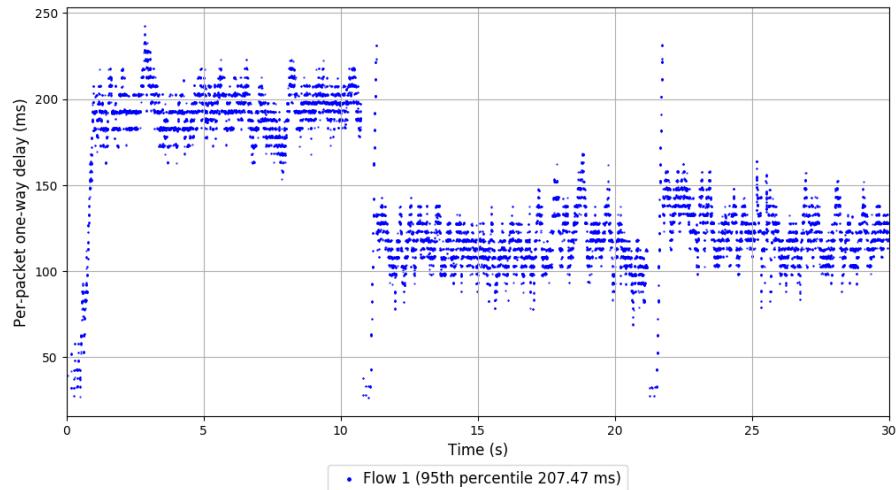
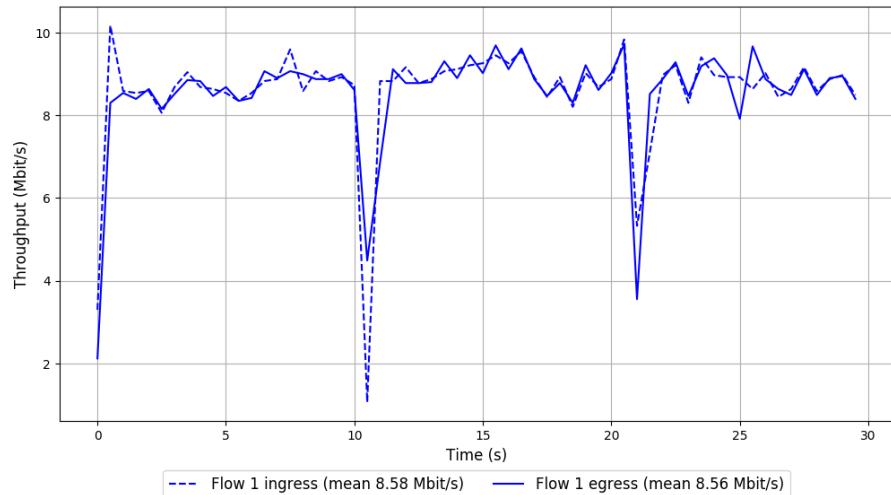
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	8.30	247.64	0.56
CalibratedKoho	2	0.39	43.20	0.05
Copa	3	1.34	38.50	0.08
TCP Cubic	3	8.02	212.25	0.68
KohoCC	2	6.63	71.98	0.12
LEDBAT	3	7.41	132.27	0.42
PCC	3	7.80	1014.37	2.88
QUIC Cubic	1	7.66	244.41	0.82
Saturator	3	8.26	265.80	0.91
SCReAM	3	0.22	34.49	0.13
Sprout	3	1.75	56.76	0.09
TaoVA-100x	3	6.10	57.84	0.14
TCP Vegas	3	4.74	48.96	0.07
Verus	3	7.25	466.23	0.91
WebRTC media	3	2.18	64.64	0.12

Run 1: Statistics of TCP BBR

```
Start at: 2017-08-21 00:52:41
End at: 2017-08-21 00:53:11
Local clock offset: 2.129 ms
Remote clock offset: -20.728 ms

# Below is generated by plot.py at 2017-08-21 01:37:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.56 Mbit/s
95th percentile per-packet one-way delay: 207.472 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 8.56 Mbit/s
95th percentile per-packet one-way delay: 207.472 ms
Loss rate: 0.43%
```

Run 1: Report of TCP BBR — Data Link

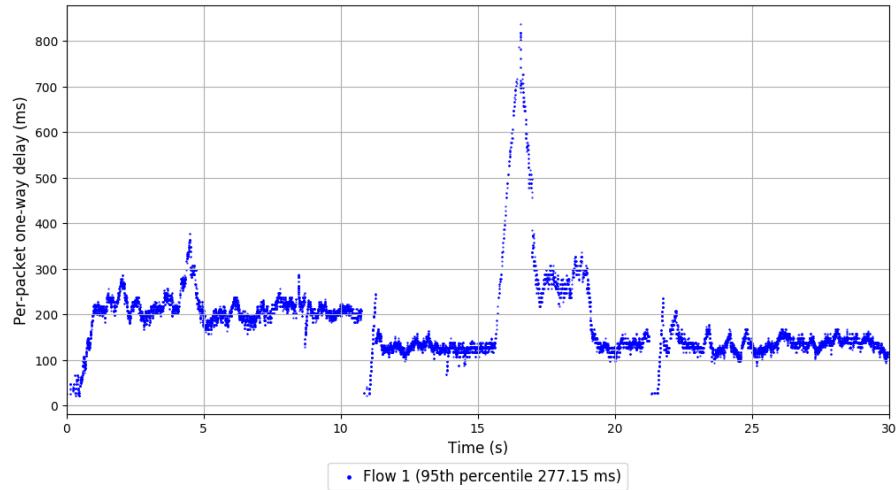
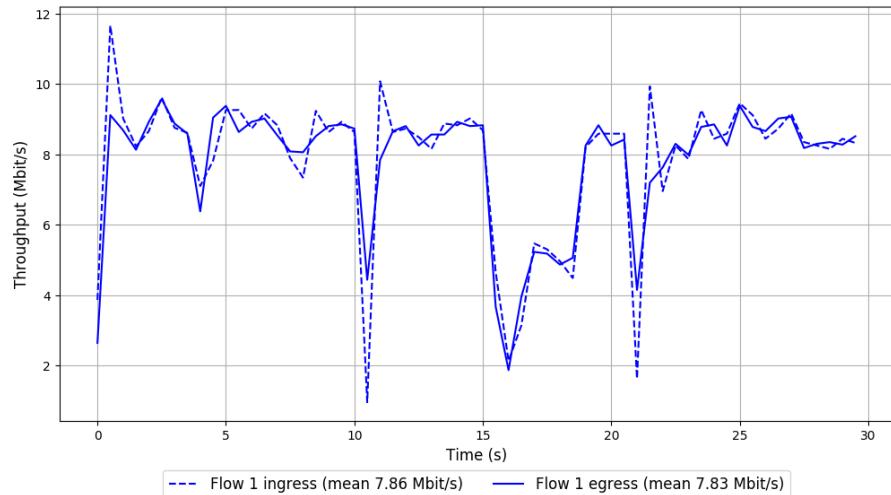


Run 2: Statistics of TCP BBR

```
Start at: 2017-08-21 01:15:15
End at: 2017-08-21 01:15:45
Local clock offset: 4.701 ms
Remote clock offset: -20.037 ms

# Below is generated by plot.py at 2017-08-21 01:37:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 277.149 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 277.149 ms
Loss rate: 0.58%
```

Run 2: Report of TCP BBR — Data Link

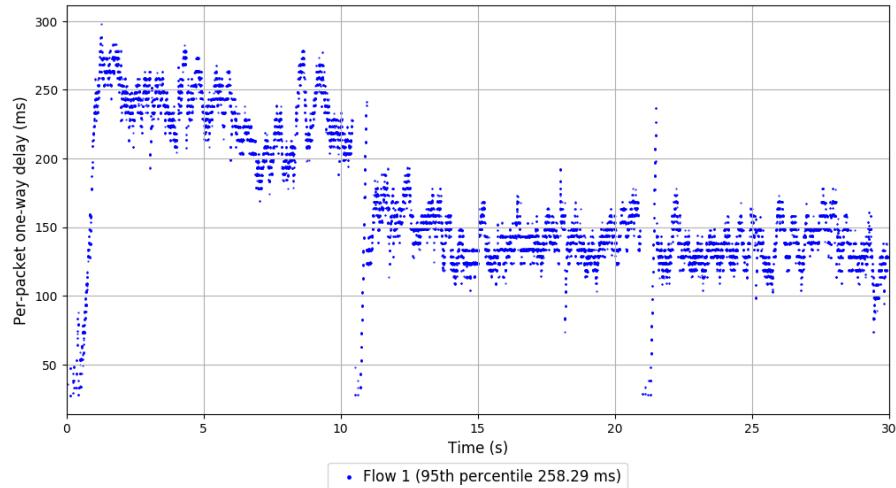
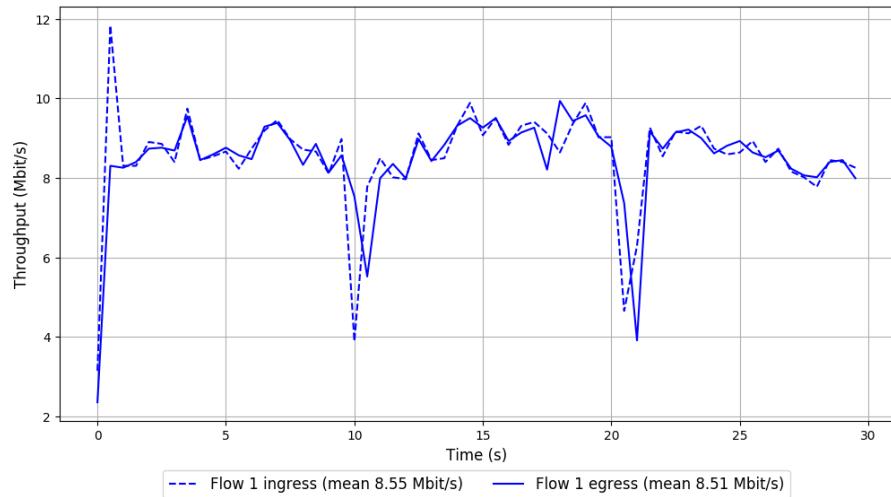


Run 3: Statistics of TCP BBR

```
Start at: 2017-08-21 01:34:49
End at: 2017-08-21 01:35:19
Local clock offset: 3.474 ms
Remote clock offset: -20.784 ms

# Below is generated by plot.py at 2017-08-21 01:37:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.51 Mbit/s
95th percentile per-packet one-way delay: 258.286 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 8.51 Mbit/s
95th percentile per-packet one-way delay: 258.286 ms
Loss rate: 0.67%
```

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of CalibratedKoho

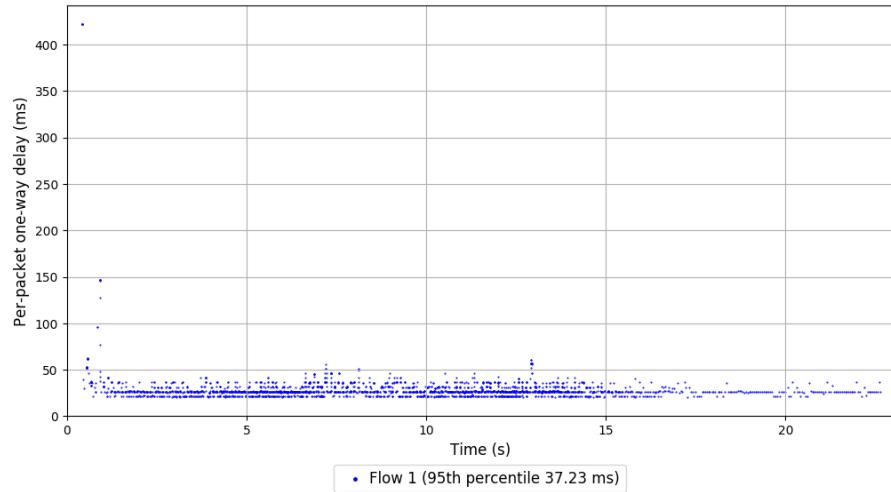
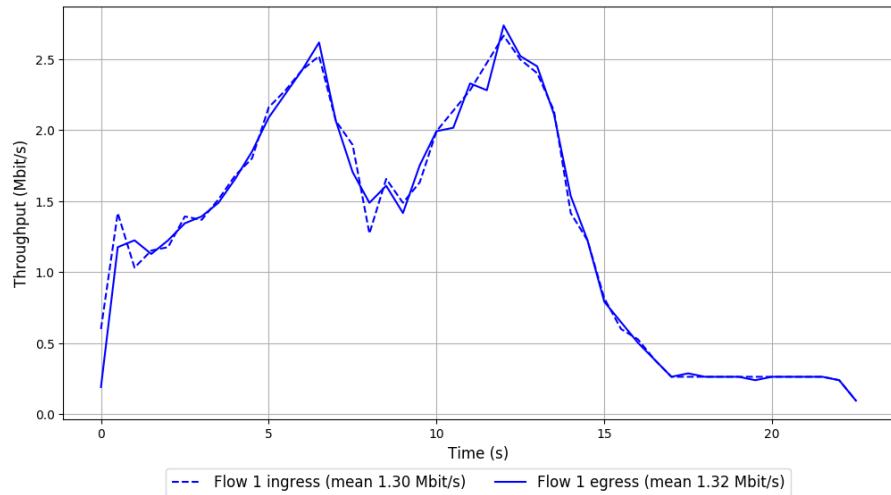
Start at: 2017-08-21 00:47:01

End at: 2017-08-21 00:47:31

Local clock offset: 4.679 ms

Remote clock offset: -22.266 ms

Run 1: Report of CalibratedKoho — Data Link

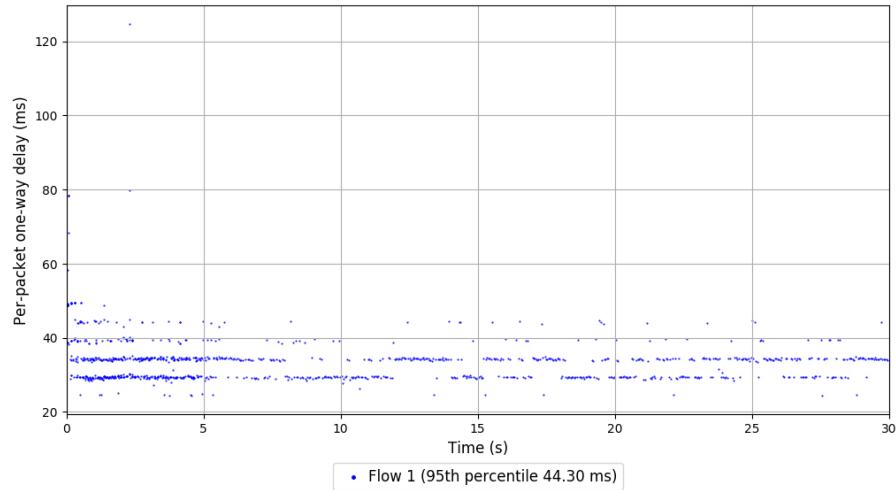
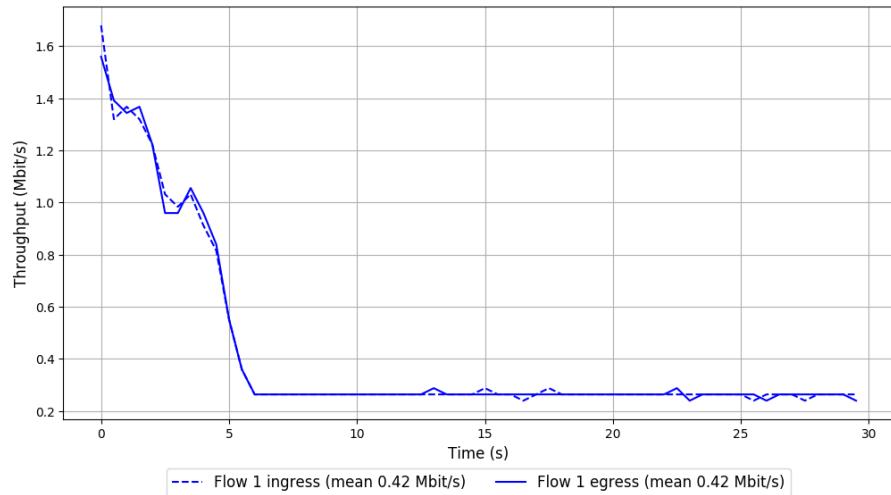


Run 2: Statistics of CalibratedKoho

```
Start at: 2017-08-21 01:09:36
End at: 2017-08-21 01:10:06
Local clock offset: 0.832 ms
Remote clock offset: -20.326 ms

# Below is generated by plot.py at 2017-08-21 01:37:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 44.295 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 44.295 ms
Loss rate: 0.10%
```

Run 2: Report of CalibratedKoho — Data Link

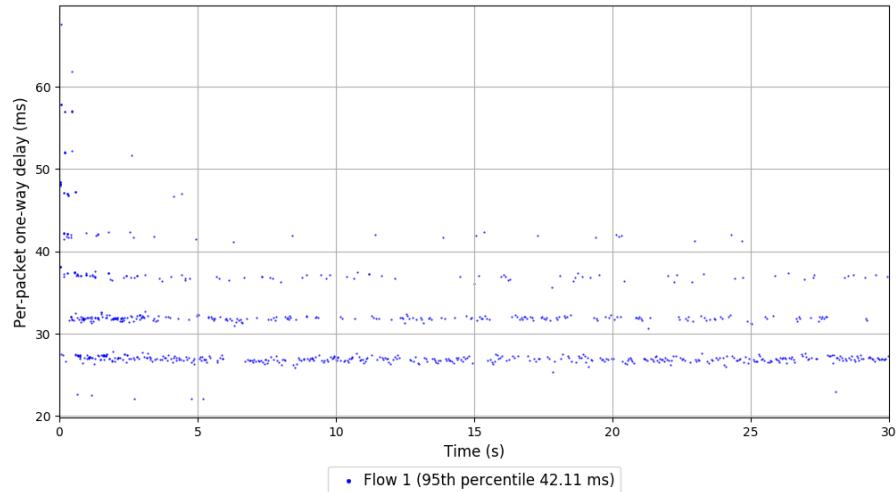
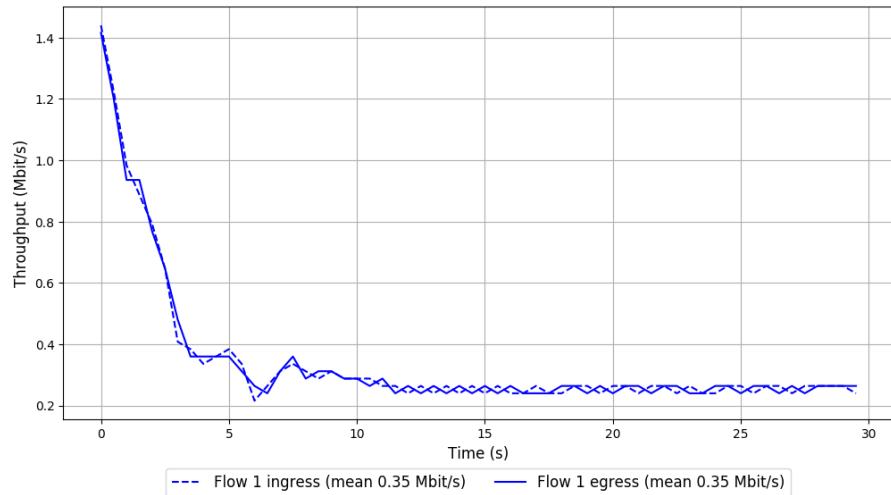


```
Run 3: Statistics of CalibratedKoho
```

```
Start at: 2017-08-21 01:29:11
End at: 2017-08-21 01:29:41
Local clock offset: 3.481 ms
Remote clock offset: -20.208 ms

# Below is generated by plot.py at 2017-08-21 01:37:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 42.110 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 42.110 ms
Loss rate: 0.00%
```

Run 3: Report of CalibratedKoho — Data Link

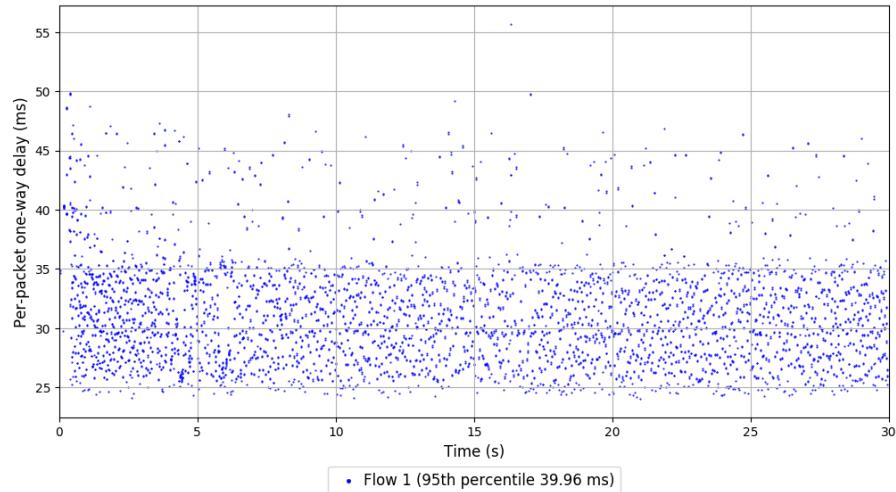


Run 1: Statistics of Copa

```
Start at: 2017-08-21 00:38:56
End at: 2017-08-21 00:39:26
Local clock offset: 1.329 ms
Remote clock offset: -19.918 ms

# Below is generated by plot.py at 2017-08-21 01:37:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 39.957 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 39.957 ms
Loss rate: 0.11%
```

Run 1: Report of Copa — Data Link

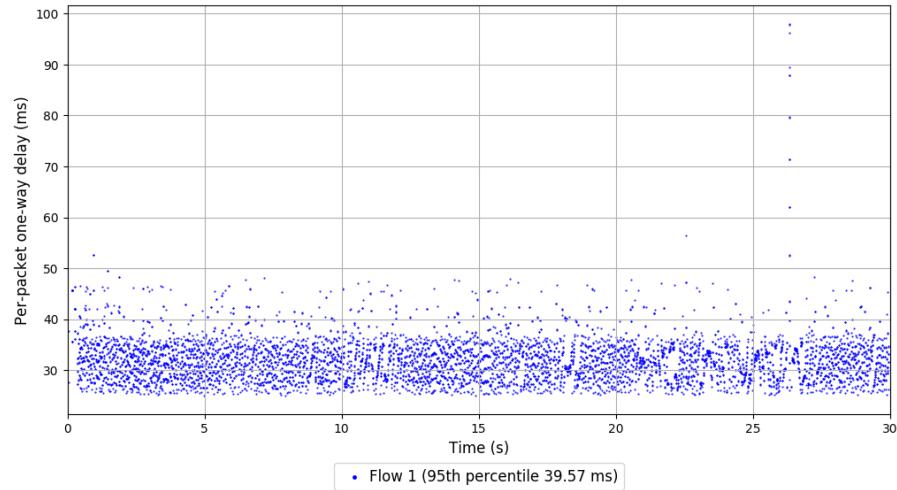
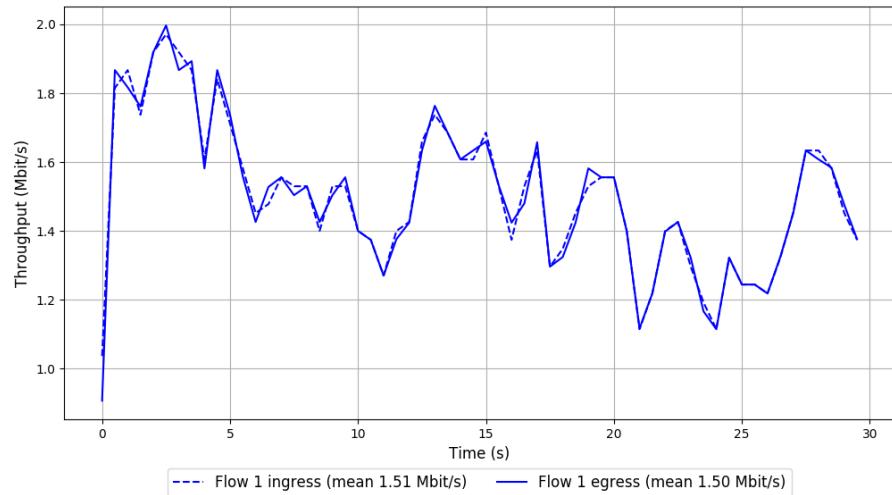


Run 2: Statistics of Copa

```
Start at: 2017-08-21 01:01:20
End at: 2017-08-21 01:01:50
Local clock offset: 0.467 ms
Remote clock offset: -20.326 ms

# Below is generated by plot.py at 2017-08-21 01:37:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 39.570 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 39.570 ms
Loss rate: 0.08%
```

Run 2: Report of Copa — Data Link

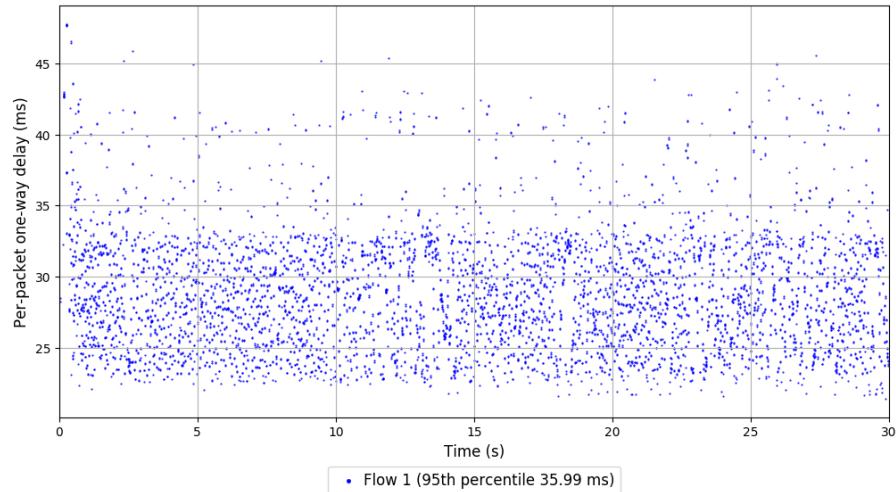
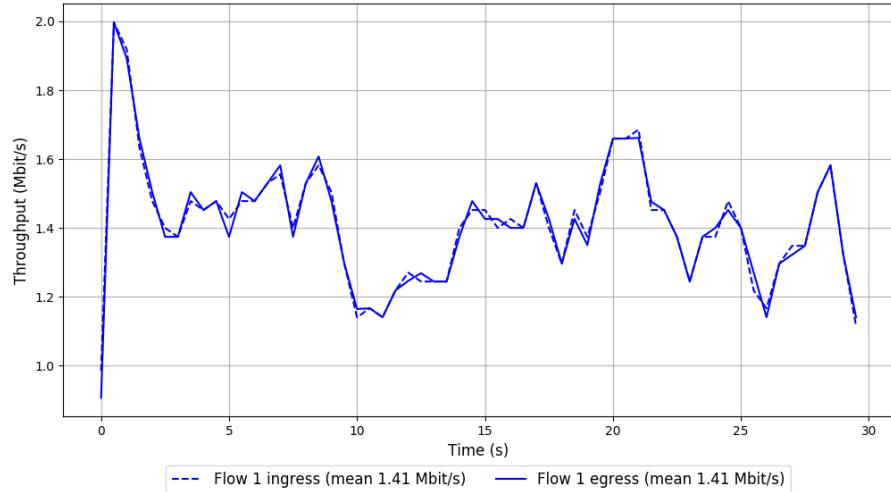


Run 3: Statistics of Copa

```
Start at: 2017-08-21 01:22:48
End at: 2017-08-21 01:23:18
Local clock offset: 0.941 ms
Remote clock offset: -20.776 ms

# Below is generated by plot.py at 2017-08-21 01:37:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 35.986 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 35.986 ms
Loss rate: 0.06%
```

Run 3: Report of Copa — Data Link

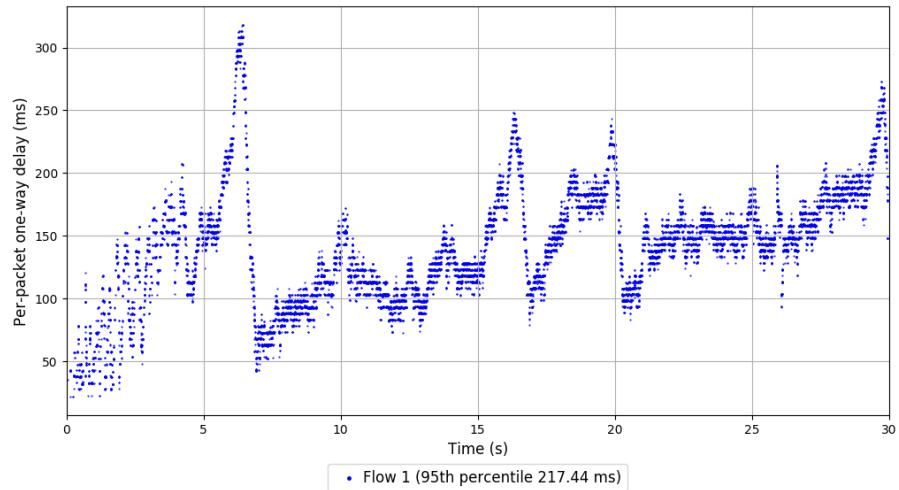
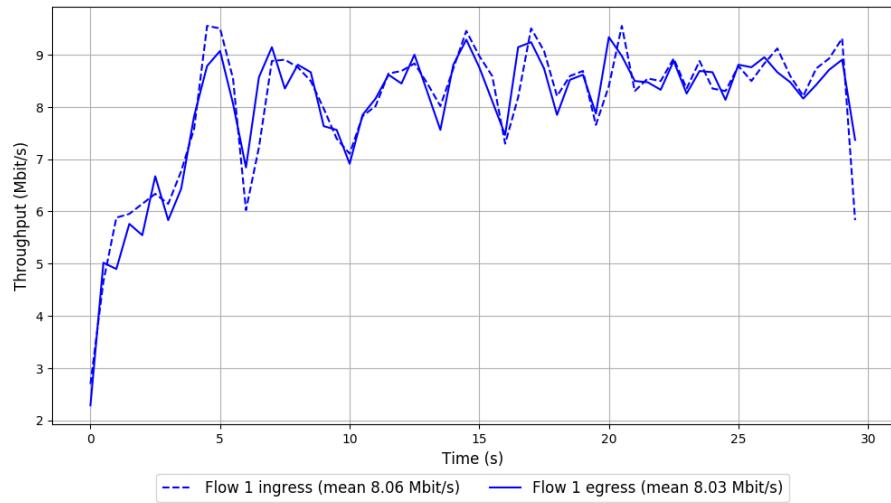


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2017-08-21 00:44:05
End at: 2017-08-21 00:44:35
Local clock offset: 1.67 ms
Remote clock offset: -23.026 ms

# Below is generated by plot.py at 2017-08-21 01:37:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.03 Mbit/s
95th percentile per-packet one-way delay: 217.438 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 8.03 Mbit/s
95th percentile per-packet one-way delay: 217.438 ms
Loss rate: 0.51%
```

Run 1: Report of TCP Cubic — Data Link

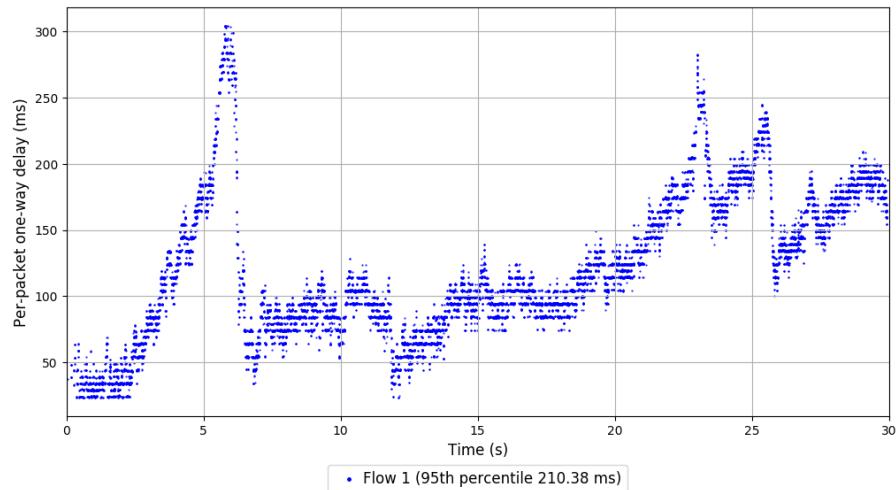
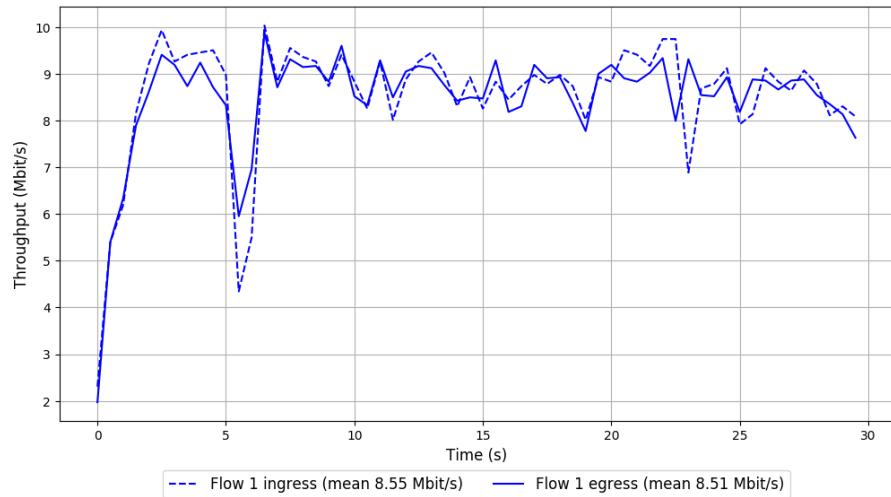


Run 2: Statistics of TCP Cubic

```
Start at: 2017-08-21 01:05:20
End at: 2017-08-21 01:05:50
Local clock offset: 2.531 ms
Remote clock offset: -22.815 ms

# Below is generated by plot.py at 2017-08-21 01:37:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.51 Mbit/s
95th percentile per-packet one-way delay: 210.379 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 8.51 Mbit/s
95th percentile per-packet one-way delay: 210.379 ms
Loss rate: 0.70%
```

Run 2: Report of TCP Cubic — Data Link

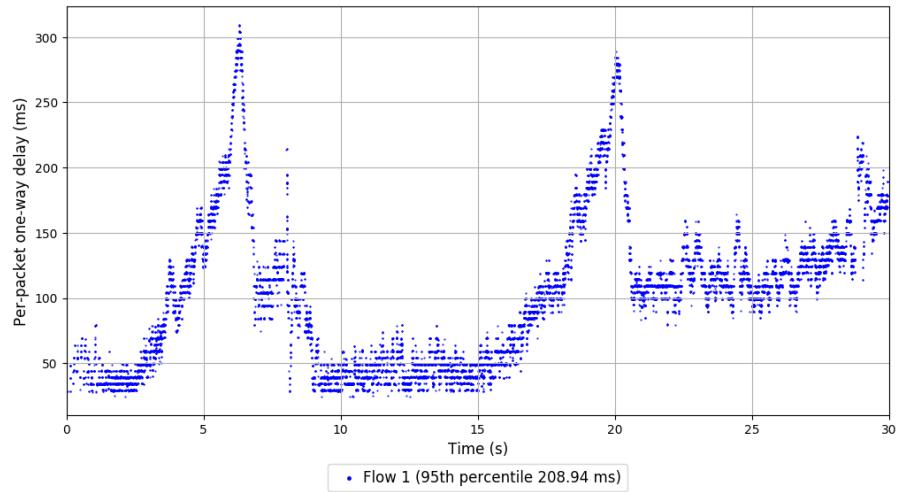
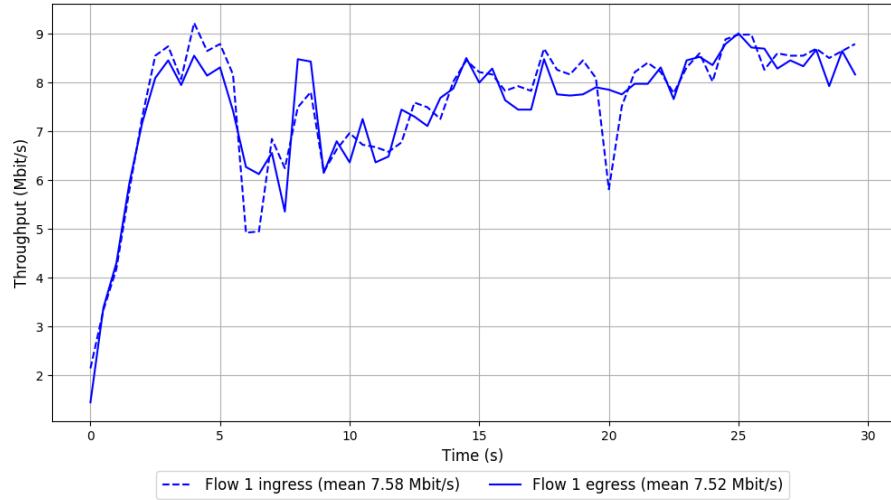


Run 3: Statistics of TCP Cubic

```
Start at: 2017-08-21 01:26:40
End at: 2017-08-21 01:27:10
Local clock offset: 1.773 ms
Remote clock offset: -19.5 ms

# Below is generated by plot.py at 2017-08-21 01:37:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.52 Mbit/s
95th percentile per-packet one-way delay: 208.943 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 7.52 Mbit/s
95th percentile per-packet one-way delay: 208.943 ms
Loss rate: 0.83%
```

Run 3: Report of TCP Cubic — Data Link

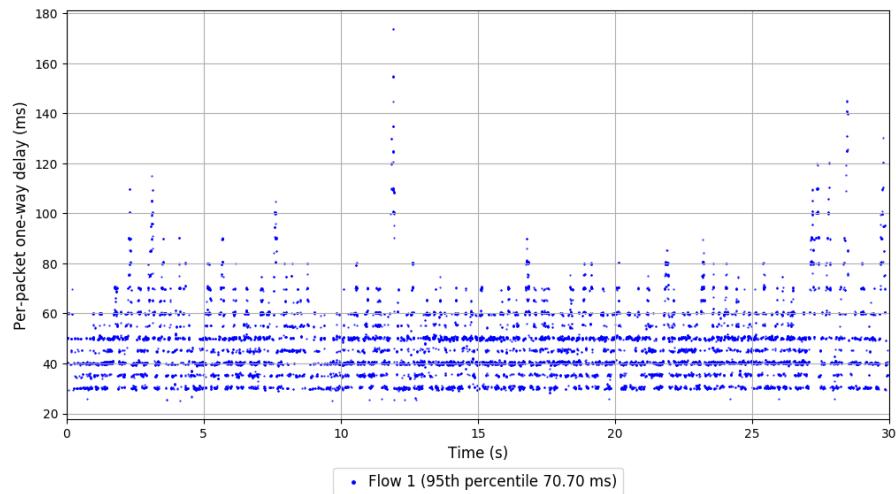
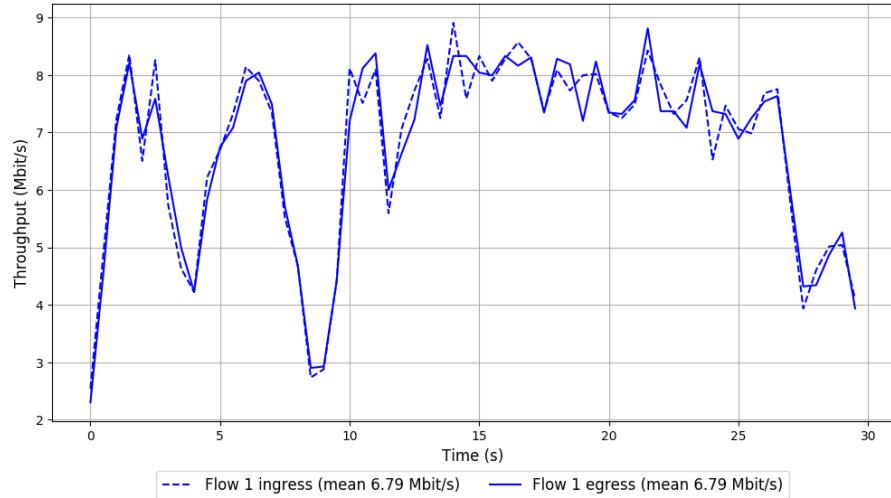


Run 1: Statistics of KohoCC

```
Start at: 2017-08-21 00:42:15
End at: 2017-08-21 00:42:45
Local clock offset: 1.247 ms
Remote clock offset: -20.689 ms

# Below is generated by plot.py at 2017-08-21 01:37:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 70.700 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 70.700 ms
Loss rate: 0.14%
```

Run 1: Report of KohoCC — Data Link

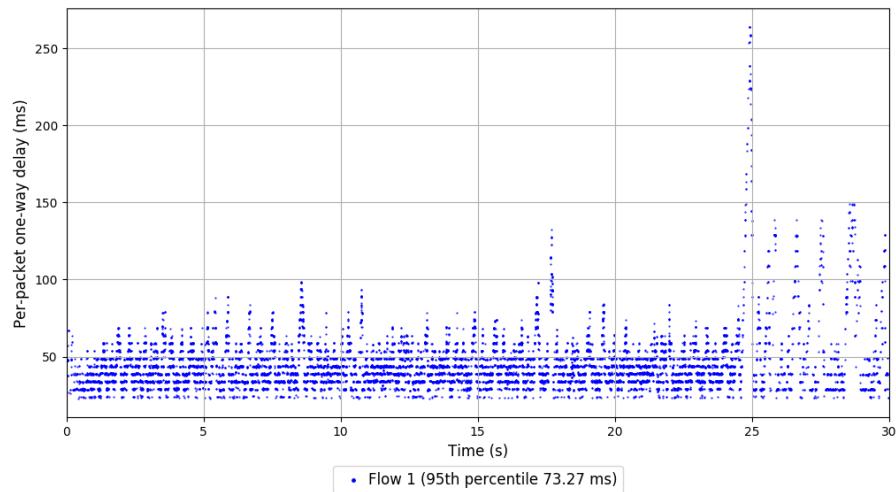
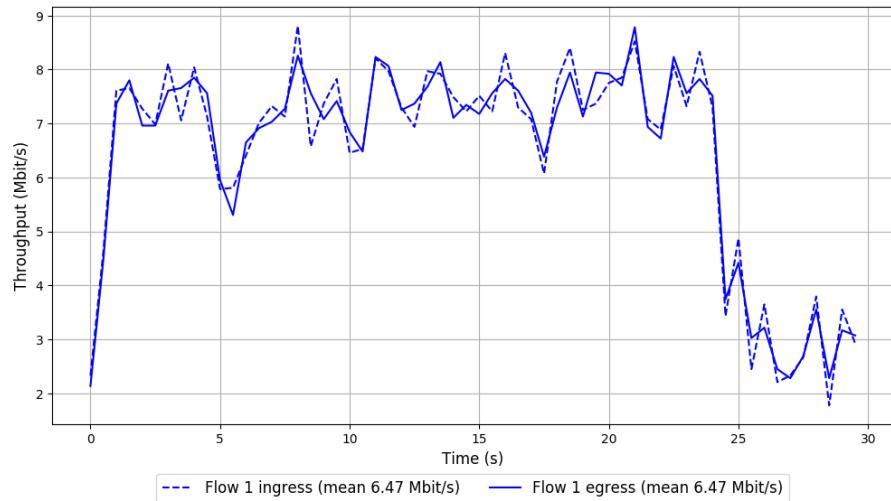


Run 2: Statistics of KohoCC

```
Start at: 2017-08-21 01:04:02
End at: 2017-08-21 01:04:32
Local clock offset: 5.376 ms
Remote clock offset: -19.79 ms

# Below is generated by plot.py at 2017-08-21 01:37:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 73.268 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 73.268 ms
Loss rate: 0.11%
```

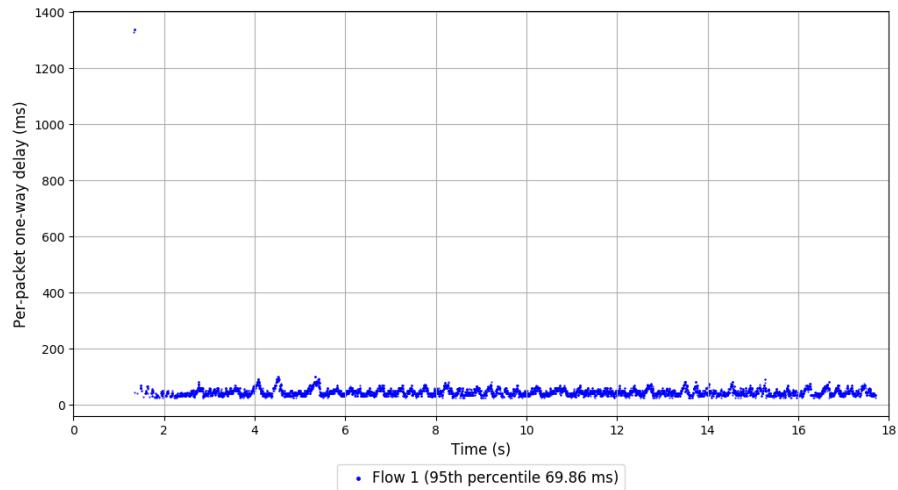
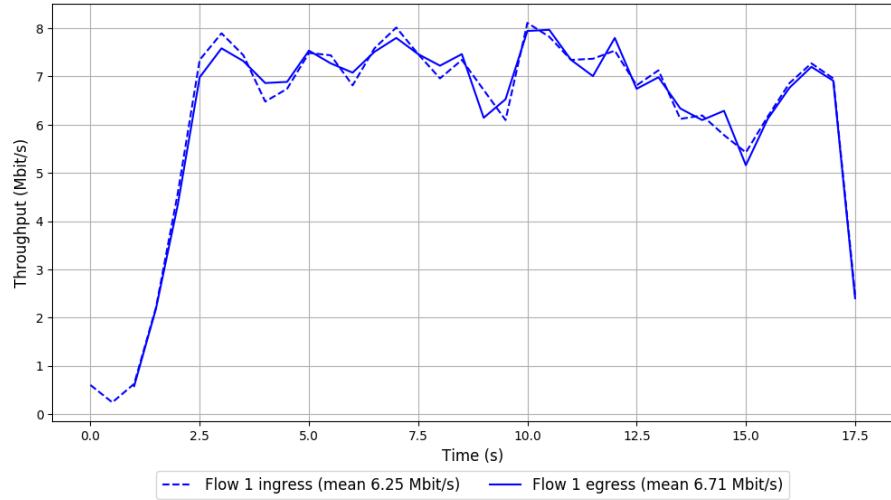
Run 2: Report of KohoCC — Data Link



Run 3: Statistics of KohoCC

Start at: 2017-08-21 01:25:08
End at: 2017-08-21 01:25:38
Local clock offset: -1.094 ms
Remote clock offset: -20.731 ms

Run 3: Report of KohoCC — Data Link

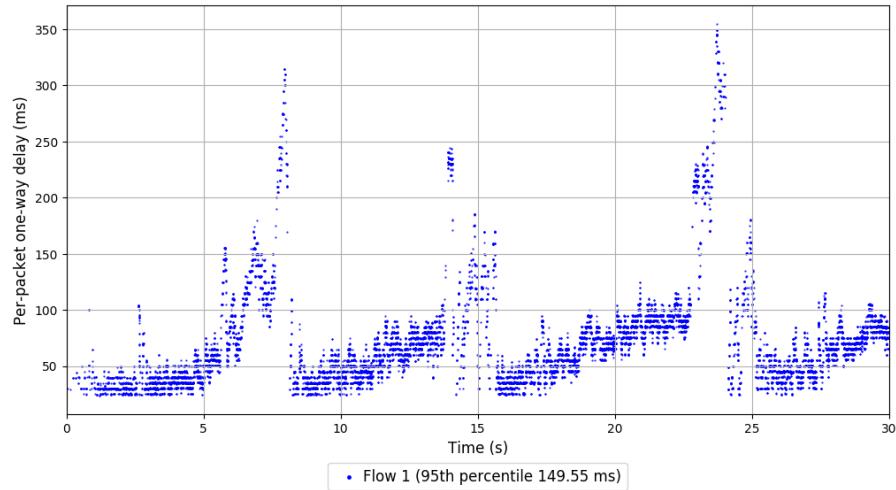
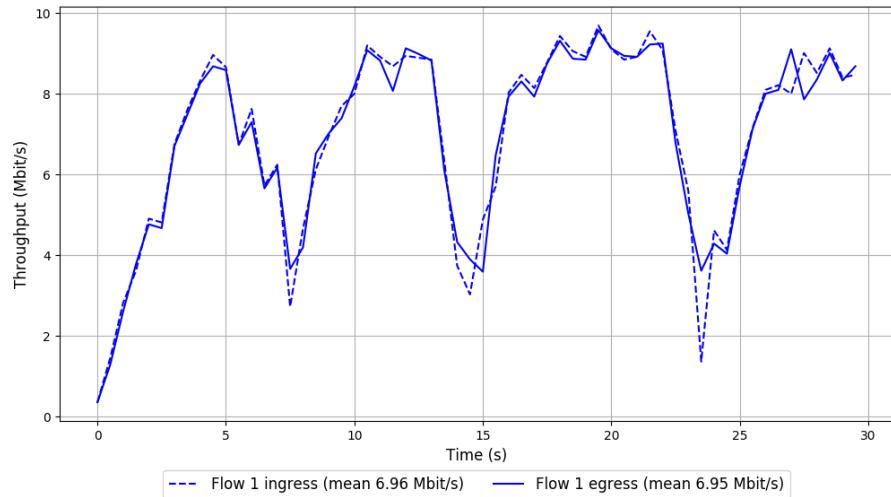


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2017-08-21 00:34:58
End at: 2017-08-21 00:35:28
Local clock offset: 3.823 ms
Remote clock offset: -20.99 ms

# Below is generated by plot.py at 2017-08-21 01:37:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.95 Mbit/s
95th percentile per-packet one-way delay: 149.548 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 6.95 Mbit/s
95th percentile per-packet one-way delay: 149.548 ms
Loss rate: 0.33%
```

Run 1: Report of LEDBAT — Data Link

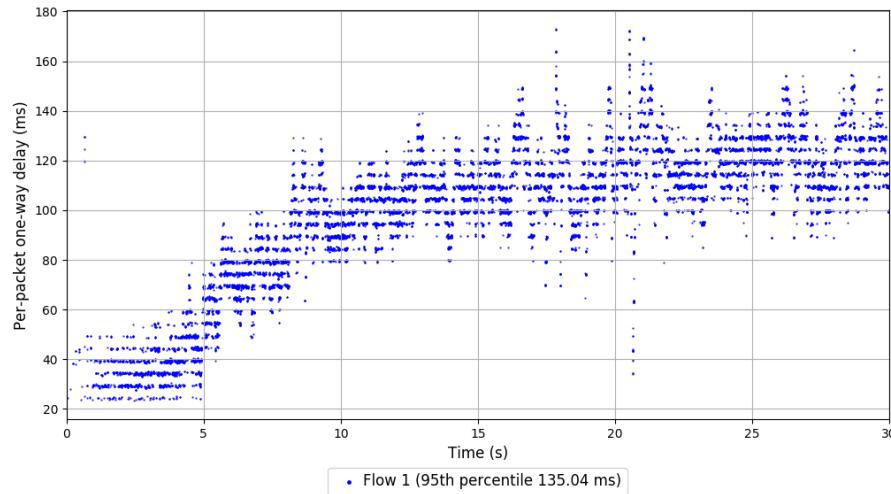
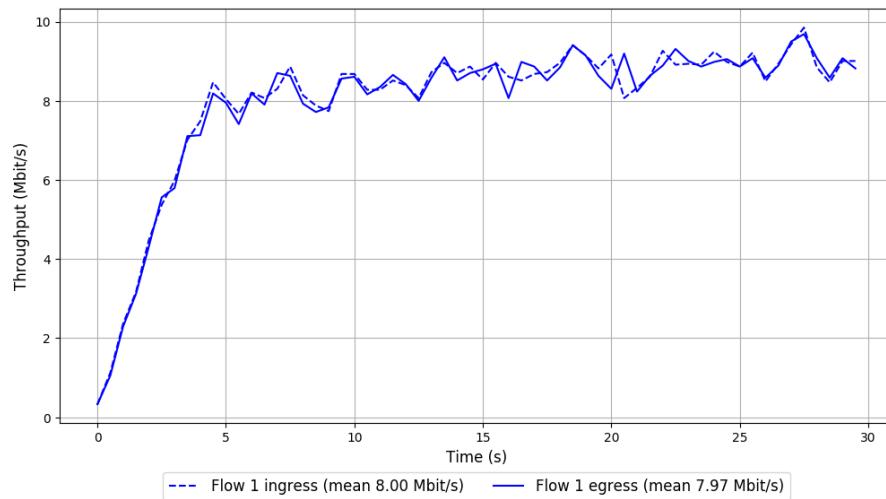


Run 2: Statistics of LEDBAT

```
Start at: 2017-08-21 00:57:10
End at: 2017-08-21 00:57:40
Local clock offset: 1.438 ms
Remote clock offset: -21.159 ms

# Below is generated by plot.py at 2017-08-21 01:37:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.97 Mbit/s
95th percentile per-packet one-way delay: 135.042 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 7.97 Mbit/s
95th percentile per-packet one-way delay: 135.042 ms
Loss rate: 0.44%
```

Run 2: Report of LEDBAT — Data Link

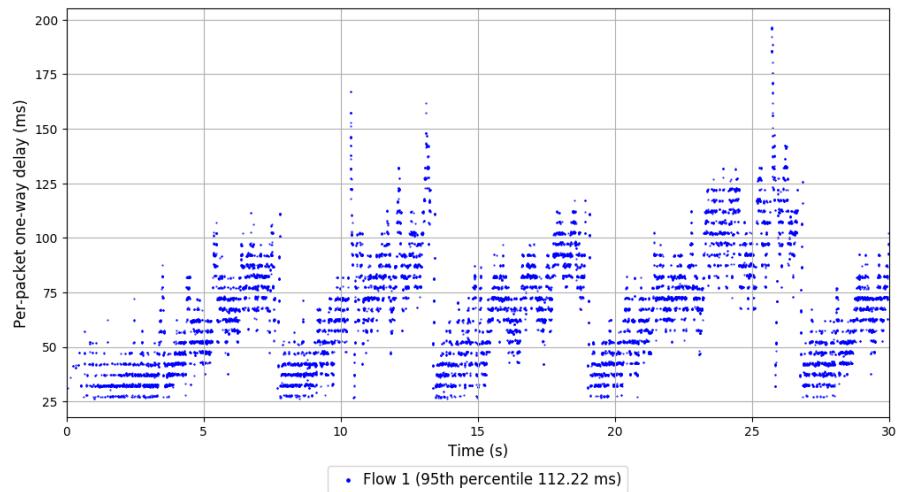
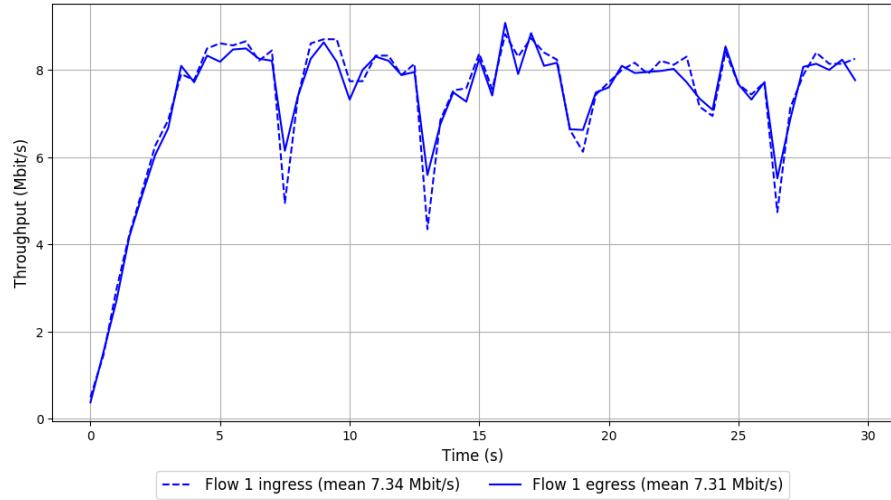


Run 3: Statistics of LEDBAT

```
Start at: 2017-08-21 01:19:03
End at: 2017-08-21 01:19:33
Local clock offset: -1.355 ms
Remote clock offset: -22.692 ms

# Below is generated by plot.py at 2017-08-21 01:37:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.31 Mbit/s
95th percentile per-packet one-way delay: 112.220 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 7.31 Mbit/s
95th percentile per-packet one-way delay: 112.220 ms
Loss rate: 0.49%
```

Run 3: Report of LEDBAT — Data Link

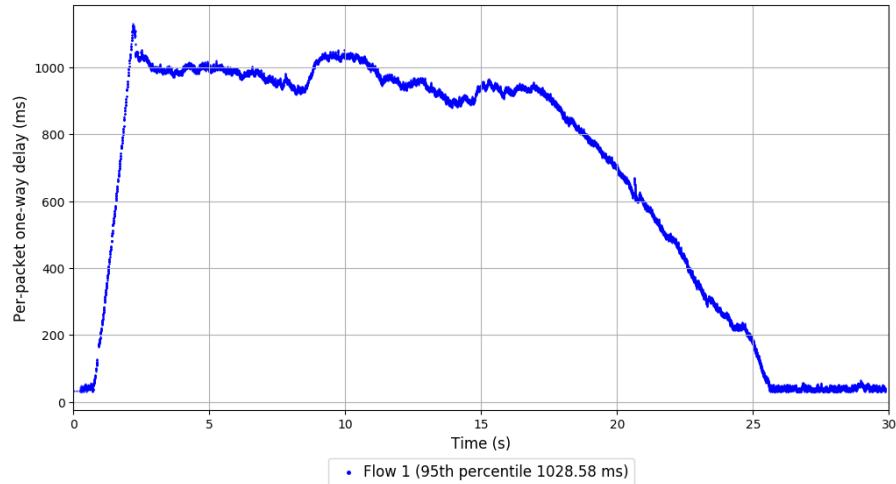
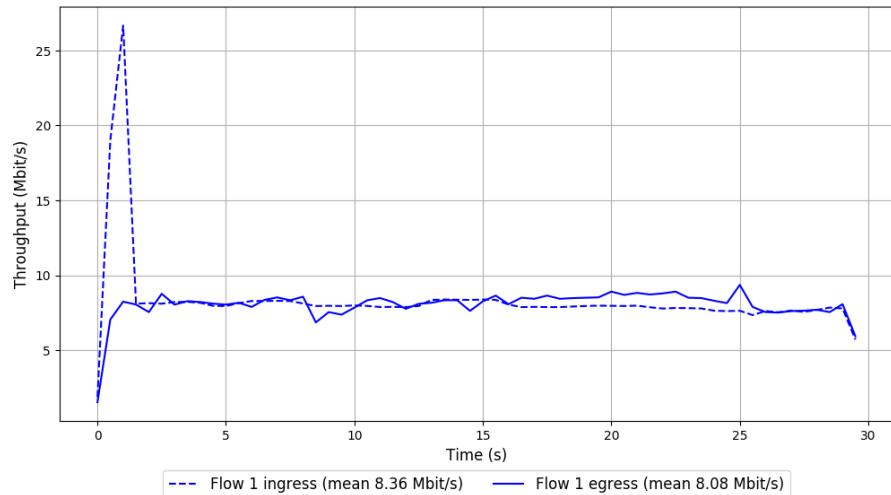


Run 1: Statistics of PCC

```
Start at: 2017-08-21 00:45:29
End at: 2017-08-21 00:45:59
Local clock offset: -1.512 ms
Remote clock offset: -19.442 ms

# Below is generated by plot.py at 2017-08-21 01:37:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.08 Mbit/s
95th percentile per-packet one-way delay: 1028.575 ms
Loss rate: 3.44%
-- Flow 1:
Average throughput: 8.08 Mbit/s
95th percentile per-packet one-way delay: 1028.575 ms
Loss rate: 3.44%
```

Run 1: Report of PCC — Data Link

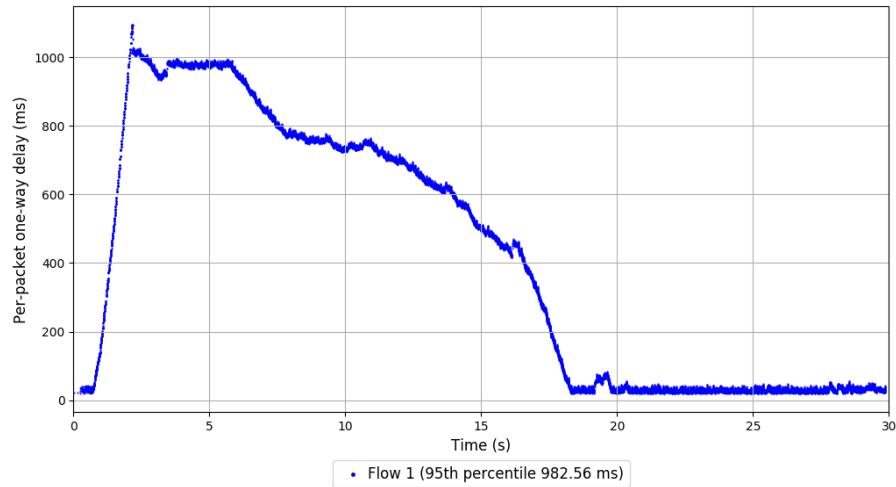
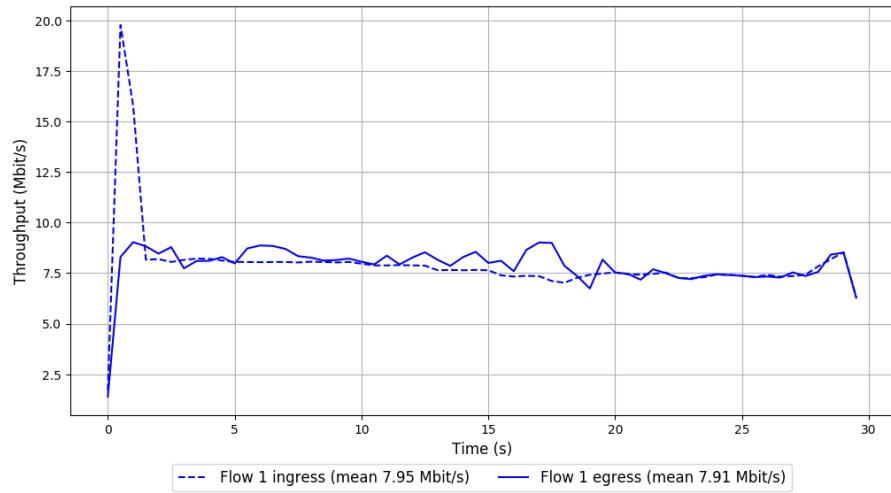


Run 2: Statistics of PCC

```
Start at: 2017-08-21 01:07:57
End at: 2017-08-21 01:08:27
Local clock offset: 5.093 ms
Remote clock offset: -20.978 ms

# Below is generated by plot.py at 2017-08-21 01:37:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.91 Mbit/s
95th percentile per-packet one-way delay: 982.557 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 7.91 Mbit/s
95th percentile per-packet one-way delay: 982.557 ms
Loss rate: 0.56%
```

Run 2: Report of PCC — Data Link

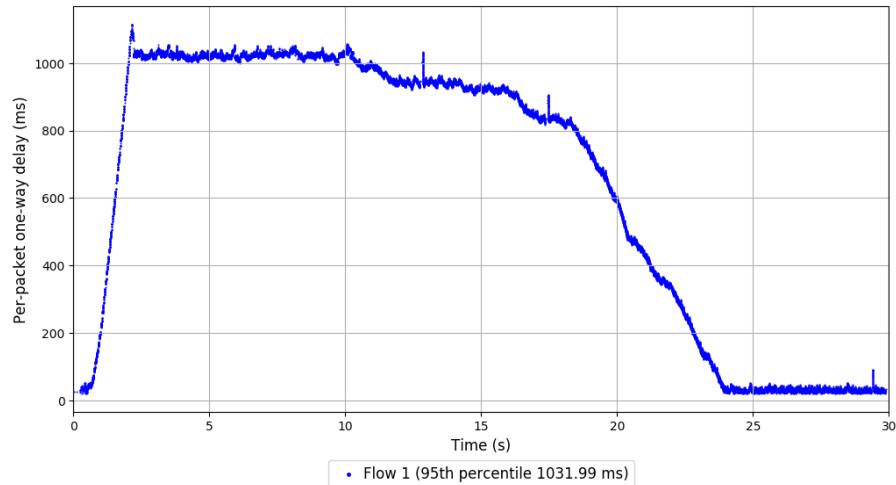
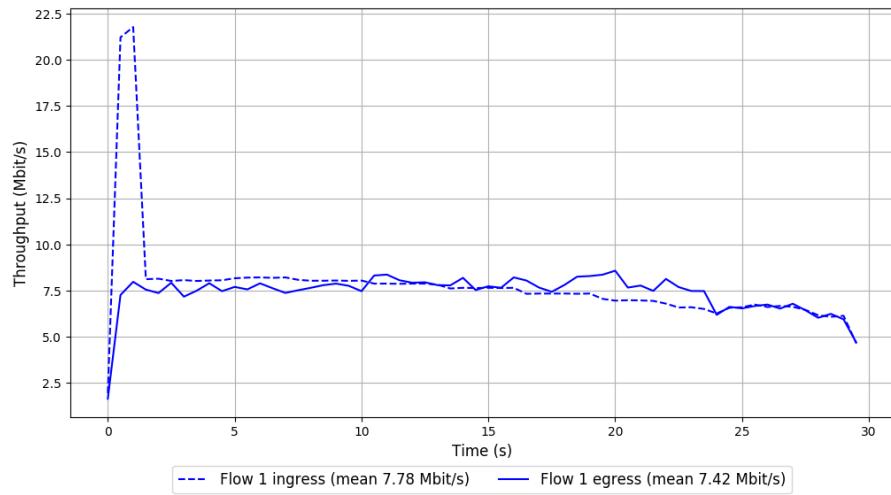


Run 3: Statistics of PCC

```
Start at: 2017-08-21 01:27:55
End at: 2017-08-21 01:28:25
Local clock offset: 4.124 ms
Remote clock offset: -19.237 ms

# Below is generated by plot.py at 2017-08-21 01:37:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.42 Mbit/s
95th percentile per-packet one-way delay: 1031.990 ms
Loss rate: 4.65%
-- Flow 1:
Average throughput: 7.42 Mbit/s
95th percentile per-packet one-way delay: 1031.990 ms
Loss rate: 4.65%
```

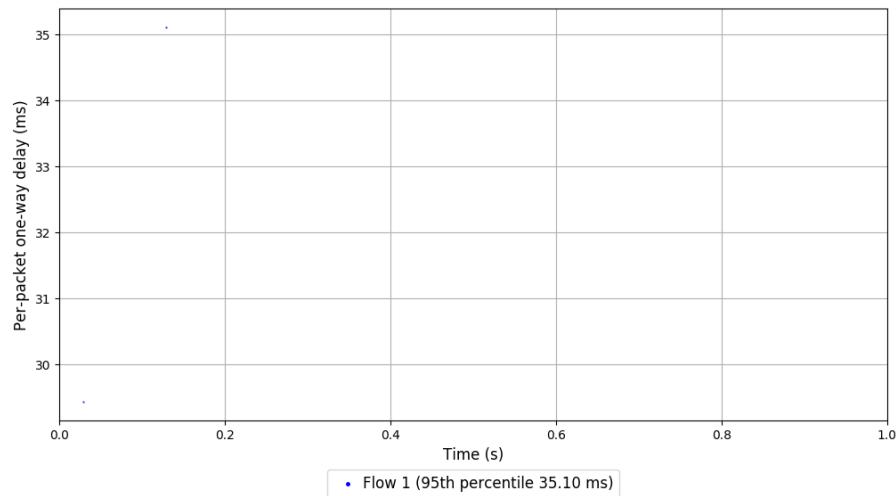
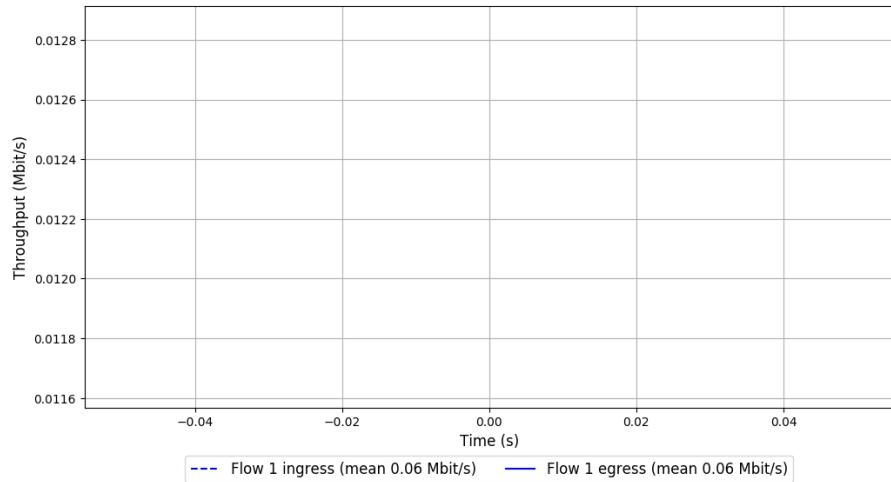
Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2017-08-21 00:36:16
End at: 2017-08-21 00:36:46
Local clock offset: 3.565 ms
Remote clock offset: -20.442 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

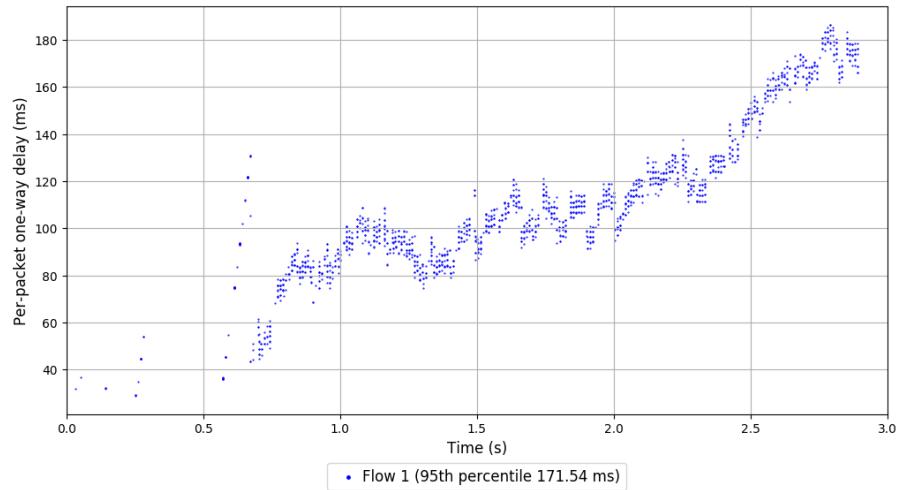
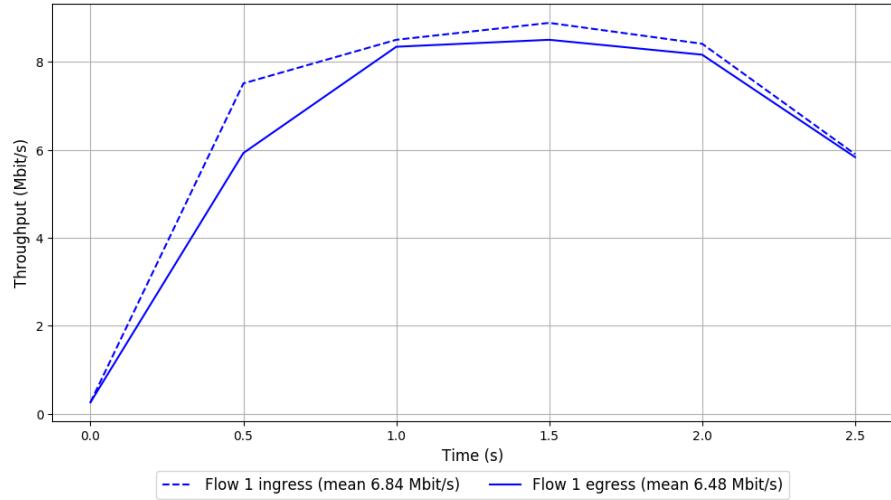
Start at: 2017-08-21 00:58:28

End at: 2017-08-21 00:58:58

Local clock offset: -0.85 ms

Remote clock offset: -19.22 ms

Run 2: Report of QUIC Cubic — Data Link

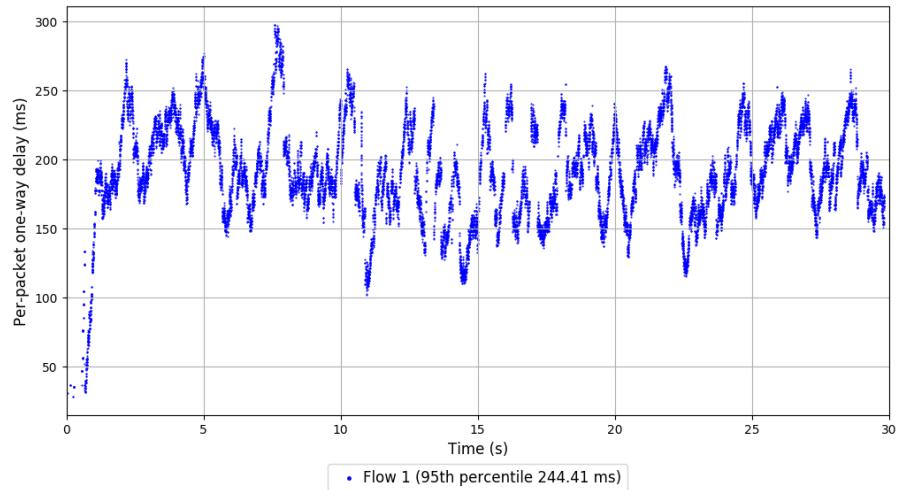
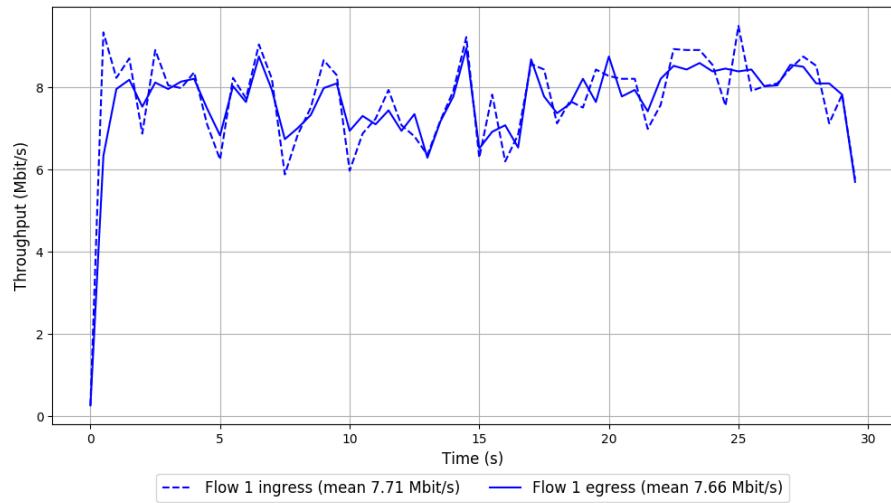


Run 3: Statistics of QUIC Cubic

```
Start at: 2017-08-21 01:20:15
End at: 2017-08-21 01:20:45
Local clock offset: 1.004 ms
Remote clock offset: -20.101 ms

# Below is generated by plot.py at 2017-08-21 01:37:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 244.405 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 244.405 ms
Loss rate: 0.82%
```

Run 3: Report of QUIC Cubic — Data Link

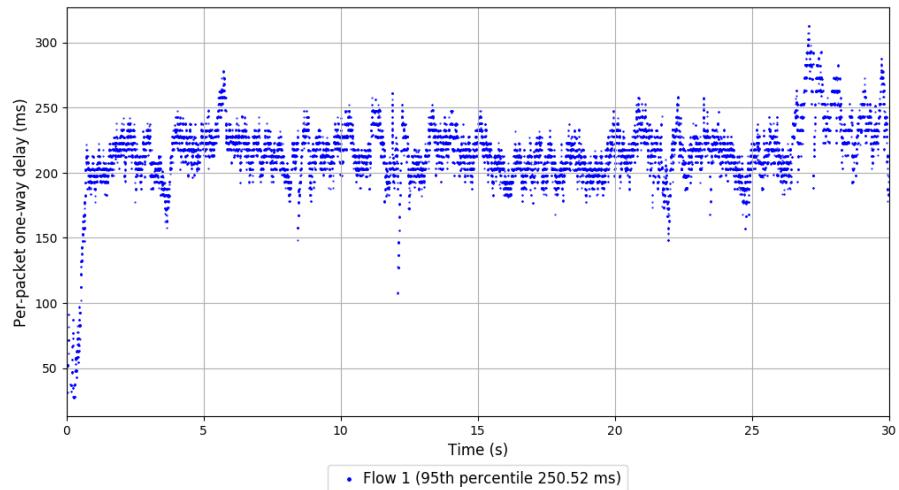
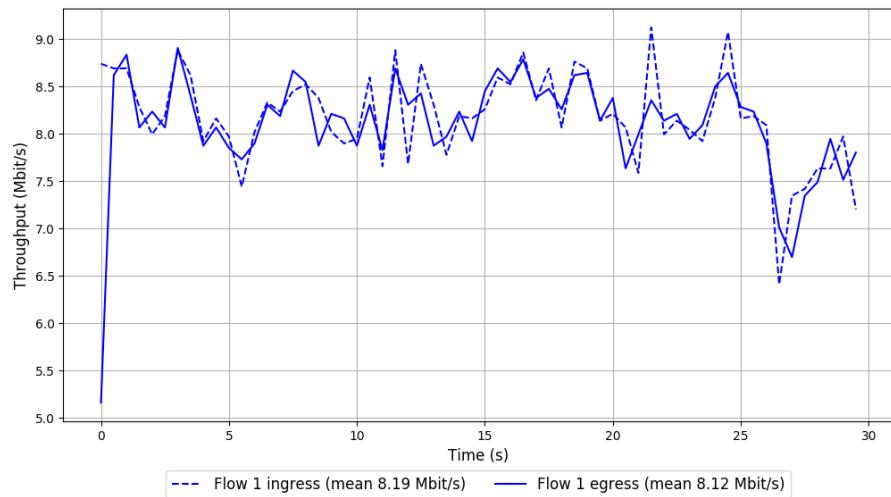


```
Run 1: Statistics of Saturator
```

```
Start at: 2017-08-21 00:48:34
End at: 2017-08-21 00:49:04
Local clock offset: 5.03 ms
Remote clock offset: -21.46 ms

# Below is generated by plot.py at 2017-08-21 01:37:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.12 Mbit/s
95th percentile per-packet one-way delay: 250.524 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 8.12 Mbit/s
95th percentile per-packet one-way delay: 250.524 ms
Loss rate: 0.96%
```

Run 1: Report of Saturator — Data Link

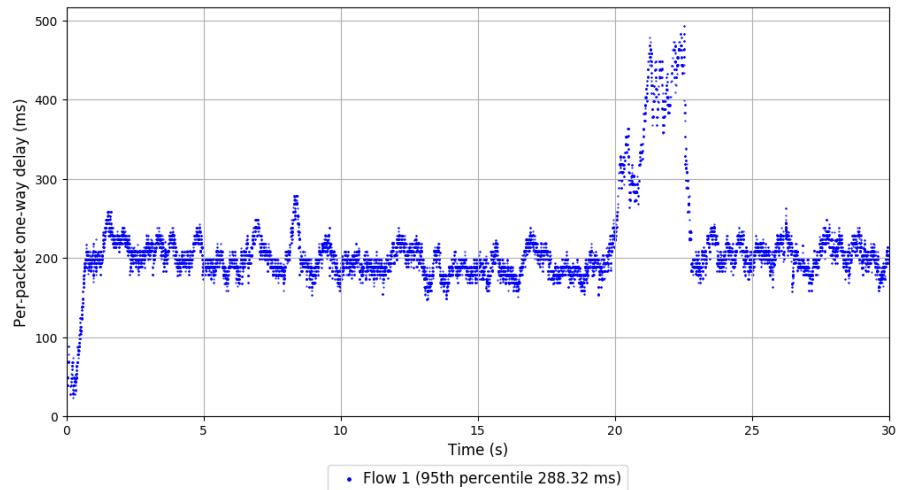
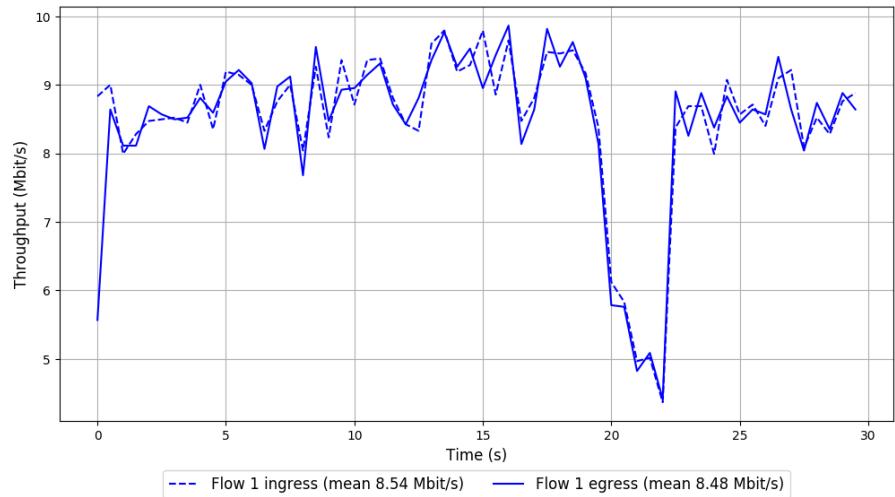


Run 2: Statistics of Saturator

```
Start at: 2017-08-21 01:10:44
End at: 2017-08-21 01:11:14
Local clock offset: 2.076 ms
Remote clock offset: -20.455 ms

# Below is generated by plot.py at 2017-08-21 01:37:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 288.318 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 288.318 ms
Loss rate: 0.76%
```

Run 2: Report of Saturator — Data Link

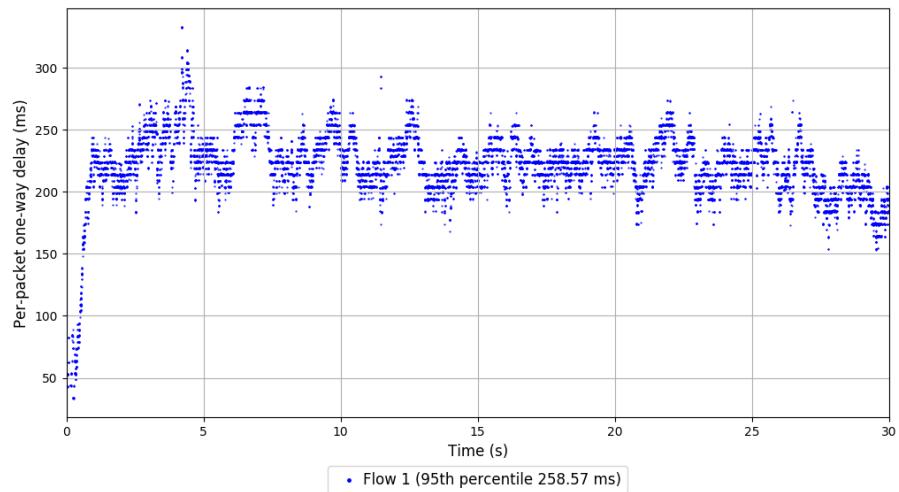
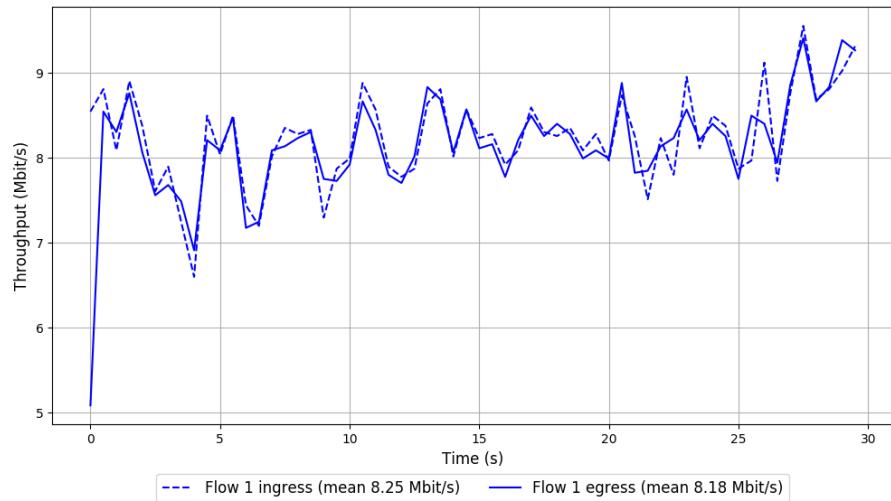


Run 3: Statistics of Saturator

```
Start at: 2017-08-21 01:30:20
End at: 2017-08-21 01:30:50
Local clock offset: -1.363 ms
Remote clock offset: -18.735 ms

# Below is generated by plot.py at 2017-08-21 01:37:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.18 Mbit/s
95th percentile per-packet one-way delay: 258.571 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 8.18 Mbit/s
95th percentile per-packet one-way delay: 258.571 ms
Loss rate: 1.02%
```

Run 3: Report of Saturator — Data Link

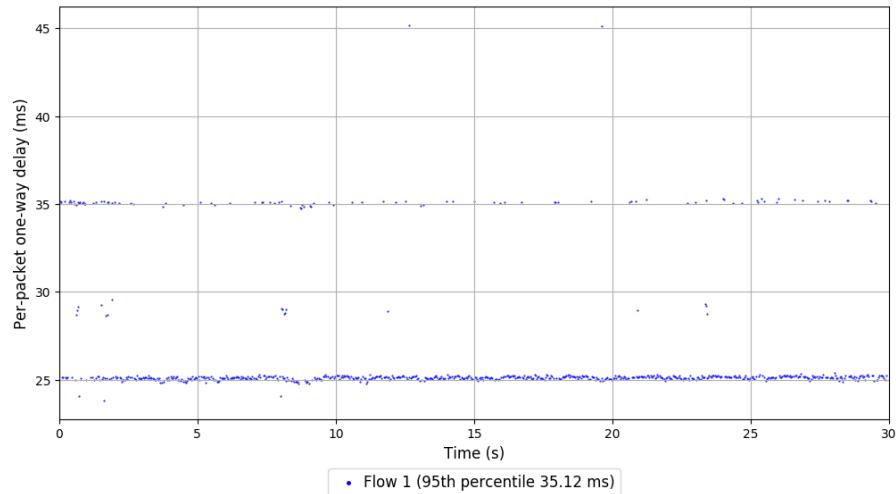
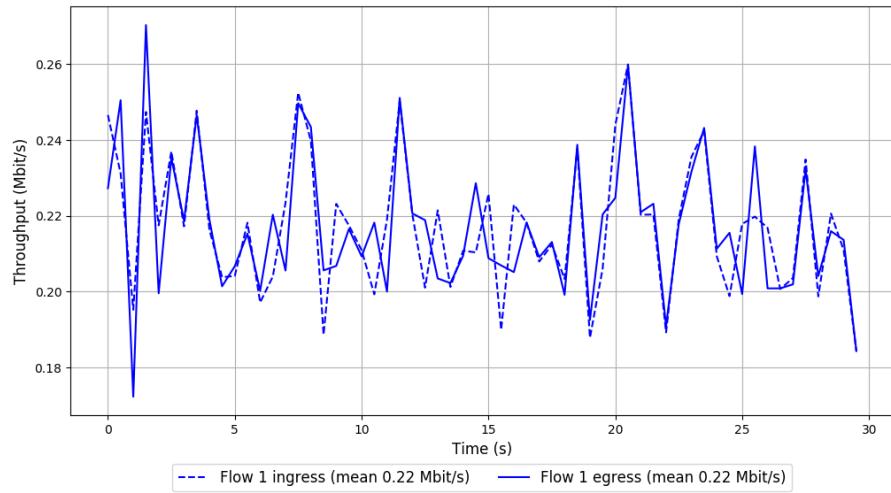


```
Run 1: Statistics of SCReAM
```

```
Start at: 2017-08-21 00:33:49
End at: 2017-08-21 00:34:19
Local clock offset: 4.583 ms
Remote clock offset: -20.482 ms

# Below is generated by plot.py at 2017-08-21 01:37:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 35.120 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 35.120 ms
Loss rate: 0.13%
```

Run 1: Report of SCReAM — Data Link

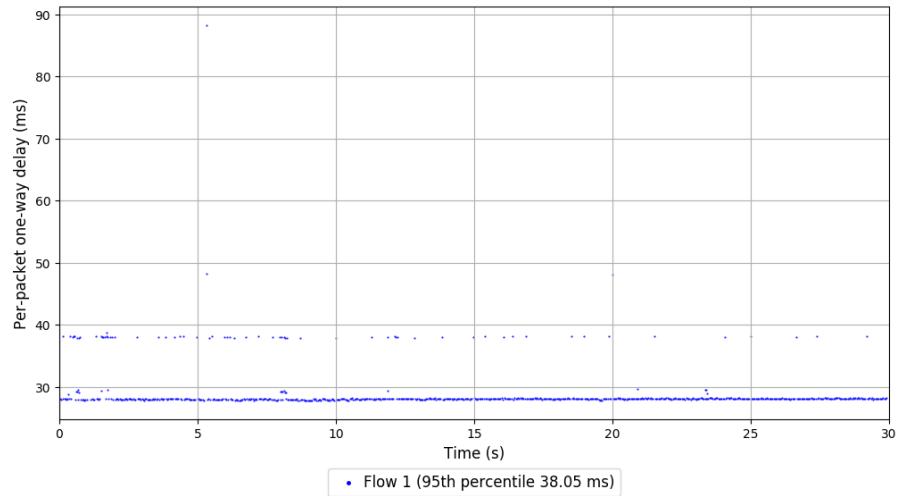
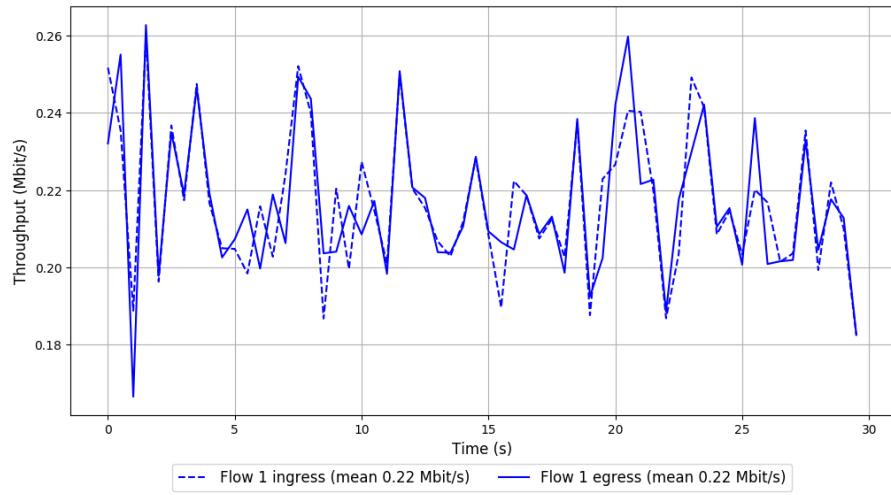


Run 2: Statistics of SCReAM

```
Start at: 2017-08-21 00:55:55
End at: 2017-08-21 00:56:25
Local clock offset: -0.781 ms
Remote clock offset: -22.656 ms

# Below is generated by plot.py at 2017-08-21 01:37:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 38.055 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 38.055 ms
Loss rate: 0.13%
```

Run 2: Report of SCReAM — Data Link

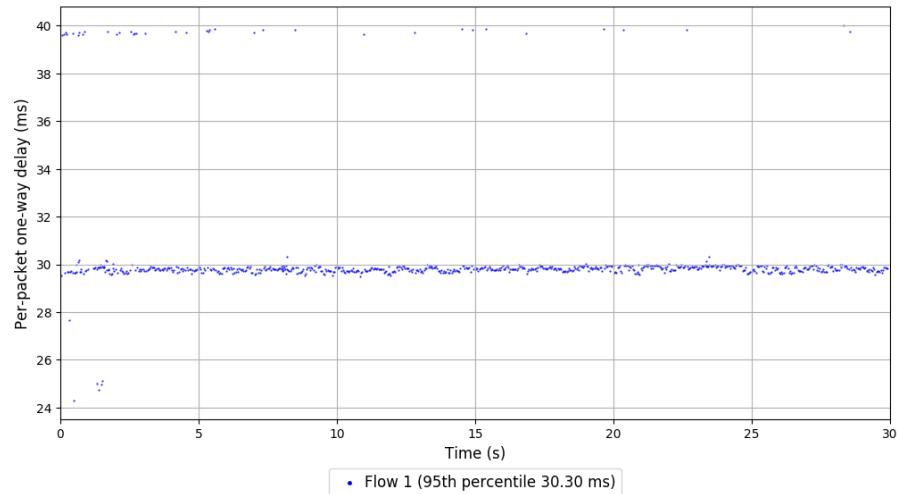
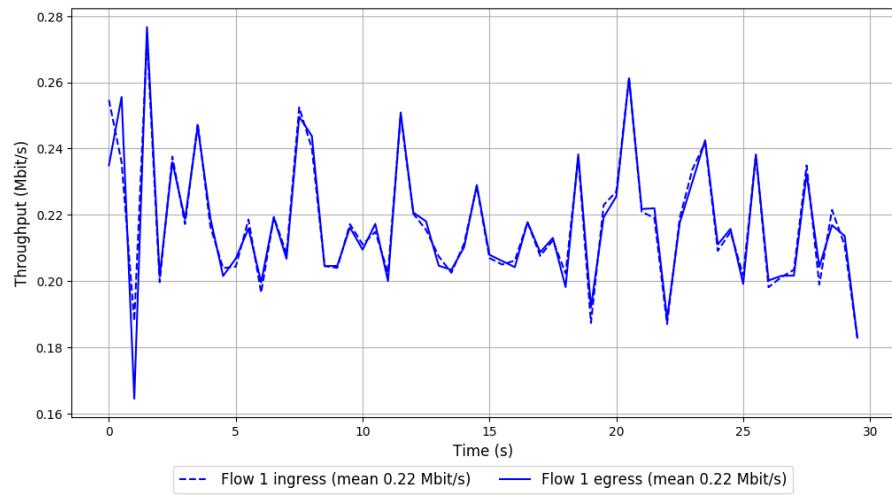


Run 3: Statistics of SCReAM

```
Start at: 2017-08-21 01:17:54
End at: 2017-08-21 01:18:24
Local clock offset: 1.96 ms
Remote clock offset: -21.036 ms

# Below is generated by plot.py at 2017-08-21 01:37:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.305 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.305 ms
Loss rate: 0.13%
```

Run 3: Report of SCReAM — Data Link

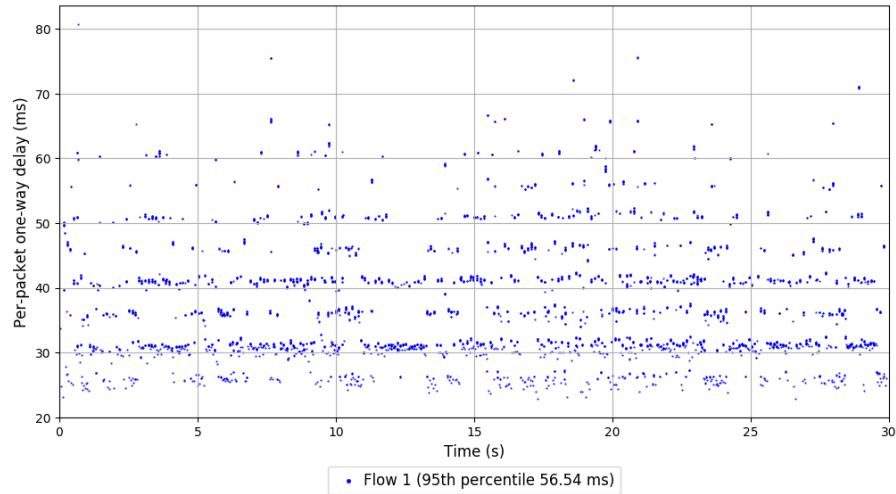
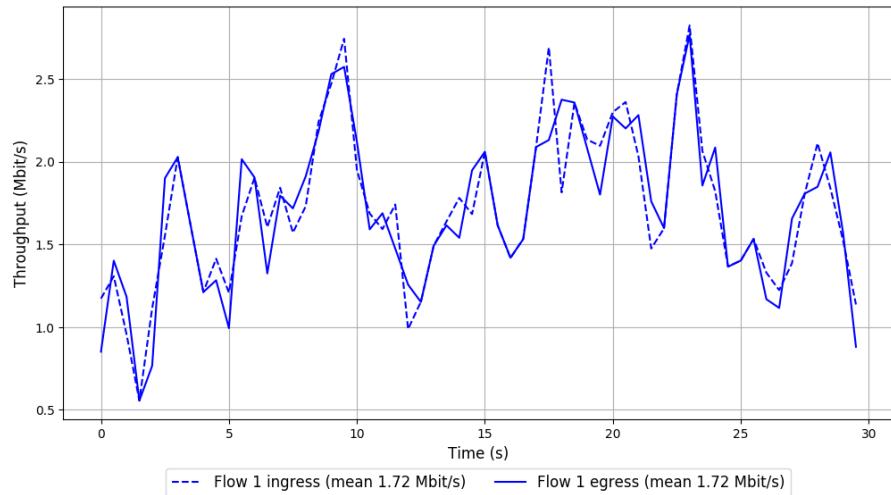


Run 1: Statistics of Sprout

```
Start at: 2017-08-21 00:49:57
End at: 2017-08-21 00:50:27
Local clock offset: -0.068 ms
Remote clock offset: -22.86 ms

# Below is generated by plot.py at 2017-08-21 01:37:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 56.538 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 56.538 ms
Loss rate: 0.25%
```

Run 1: Report of Sprout — Data Link

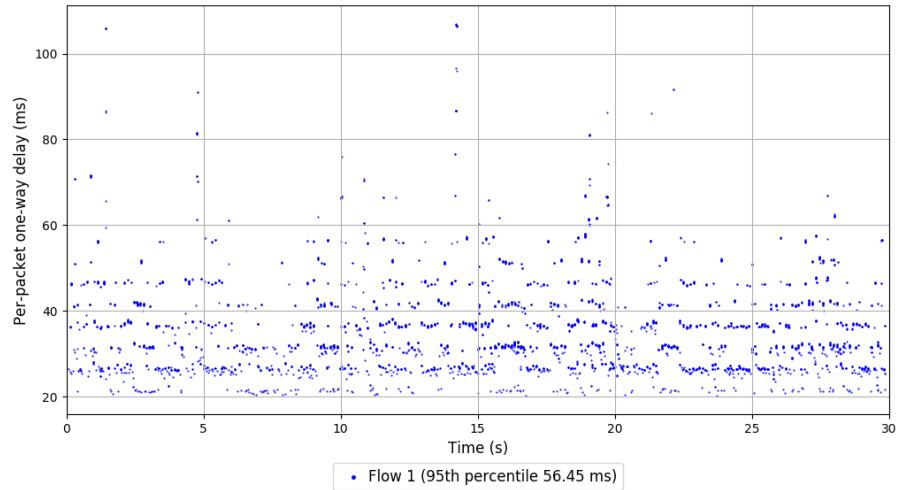
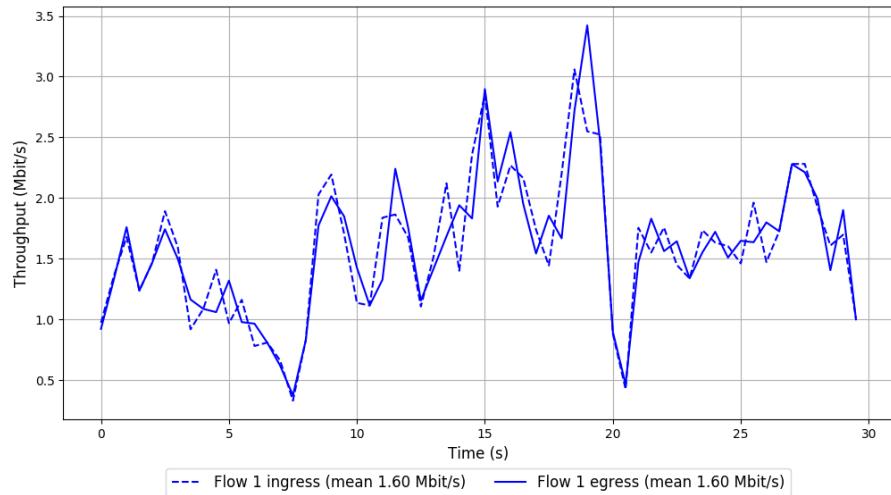


Run 2: Statistics of Sprout

```
Start at: 2017-08-21 01:12:27
End at: 2017-08-21 01:12:57
Local clock offset: 4.072 ms
Remote clock offset: -20.228 ms

# Below is generated by plot.py at 2017-08-21 01:37:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 56.445 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 56.445 ms
Loss rate: 0.01%
```

Run 2: Report of Sprout — Data Link

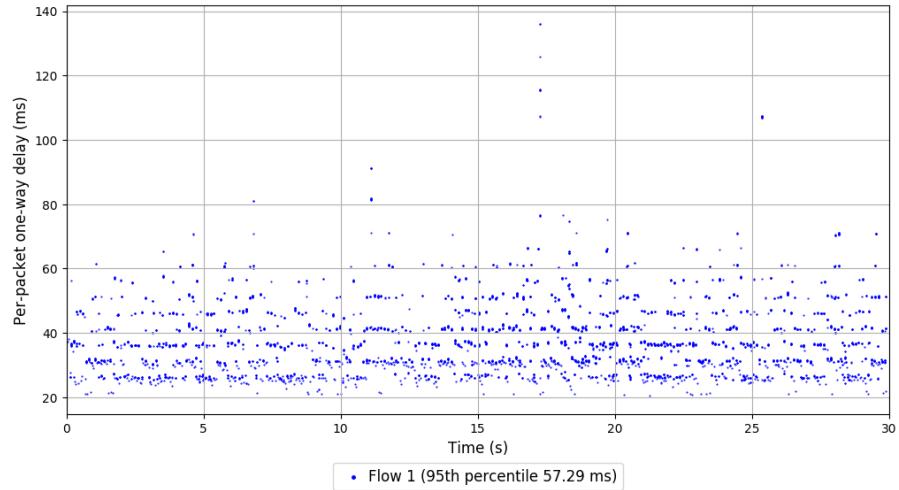
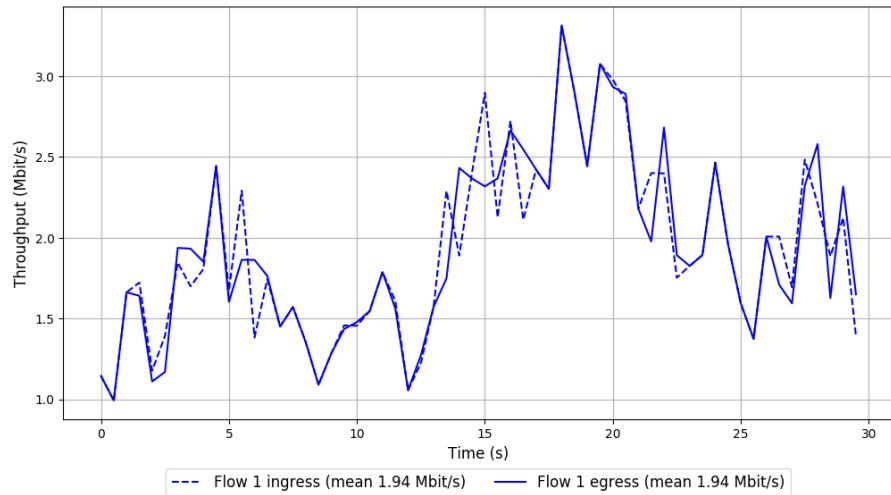


Run 3: Statistics of Sprout

```
Start at: 2017-08-21 01:31:35
End at: 2017-08-21 01:32:05
Local clock offset: 3.826 ms
Remote clock offset: -20.689 ms

# Below is generated by plot.py at 2017-08-21 01:37:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 57.294 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 57.294 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

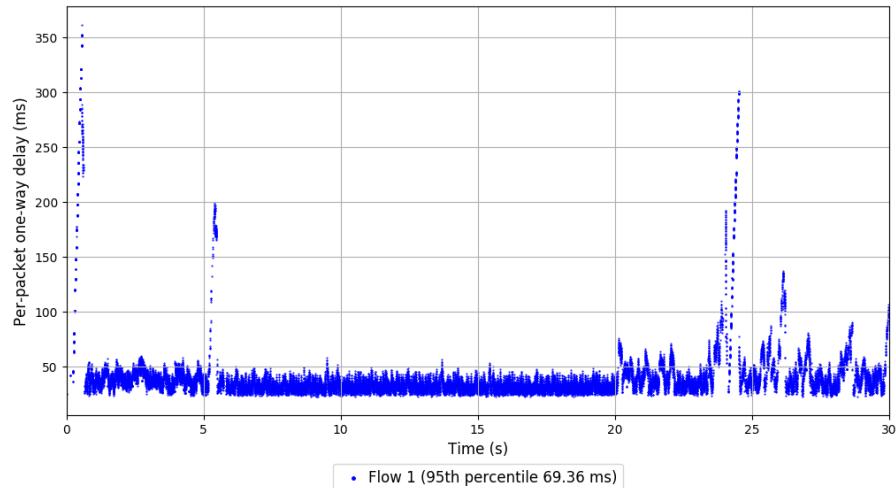
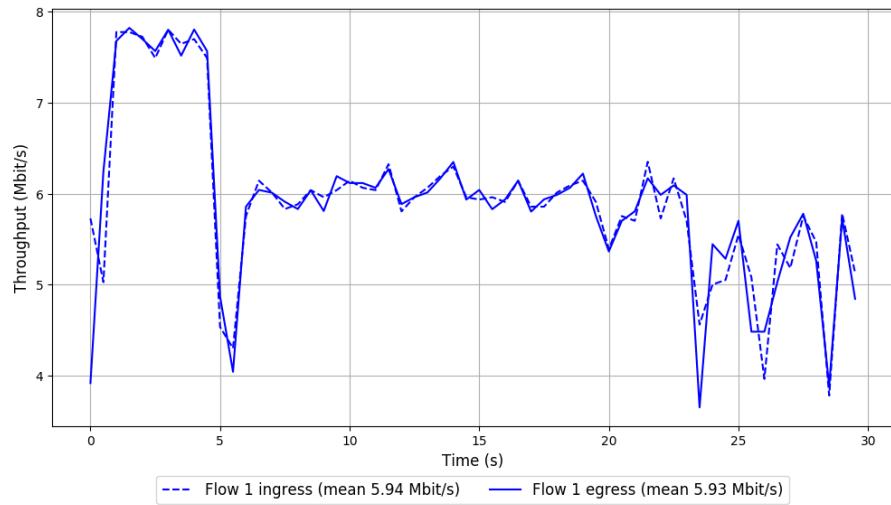


Run 1: Statistics of TaoVA-100x

```
Start at: 2017-08-21 00:51:12
End at: 2017-08-21 00:51:42
Local clock offset: 2.172 ms
Remote clock offset: -20.409 ms

# Below is generated by plot.py at 2017-08-21 01:37:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.93 Mbit/s
95th percentile per-packet one-way delay: 69.358 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 5.93 Mbit/s
95th percentile per-packet one-way delay: 69.358 ms
Loss rate: 0.24%
```

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

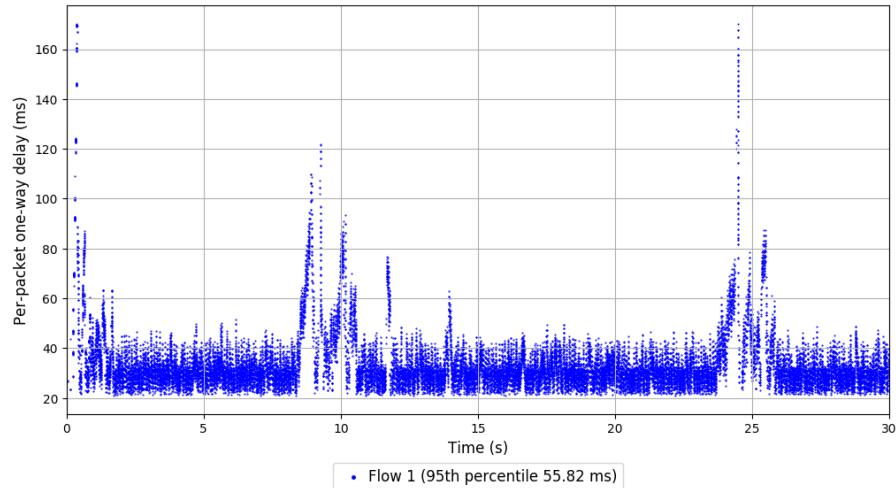
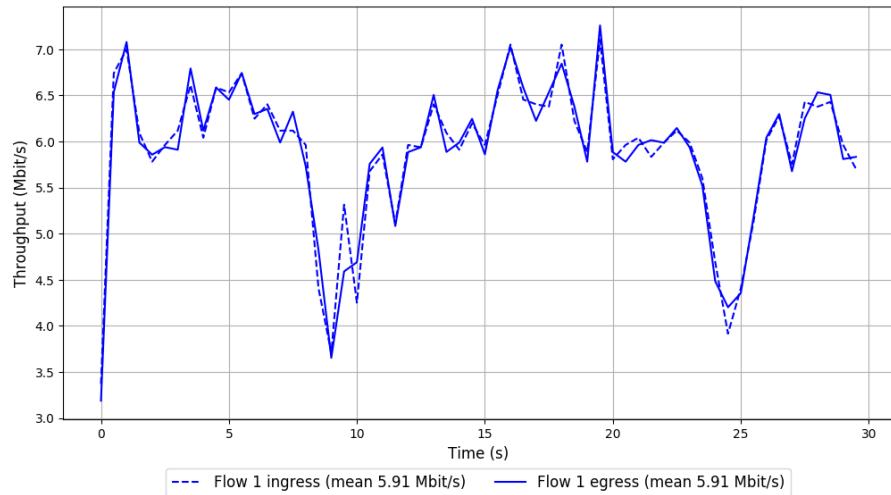


Run 2: Statistics of TaoVA-100x

```
Start at: 2017-08-21 01:13:38
End at: 2017-08-21 01:14:08
Local clock offset: 2.441 ms
Remote clock offset: -20.111 ms

# Below is generated by plot.py at 2017-08-21 01:37:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.91 Mbit/s
95th percentile per-packet one-way delay: 55.821 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 5.91 Mbit/s
95th percentile per-packet one-way delay: 55.821 ms
Loss rate: 0.11%
```

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

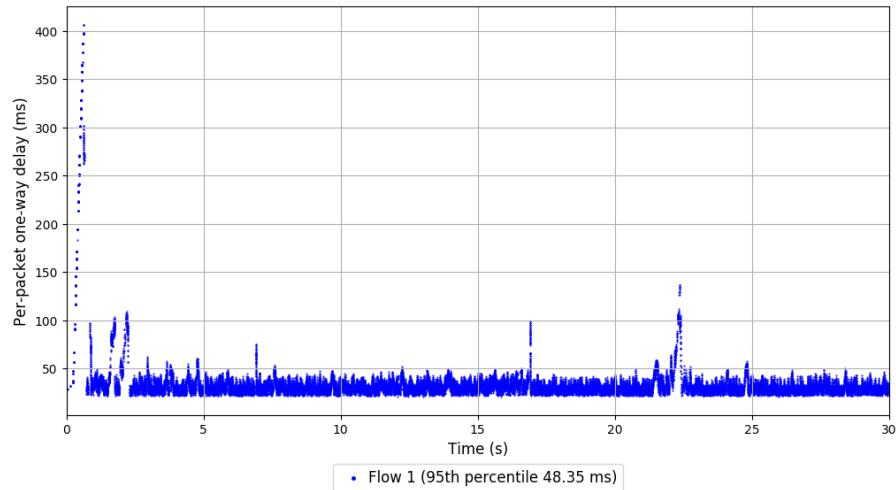
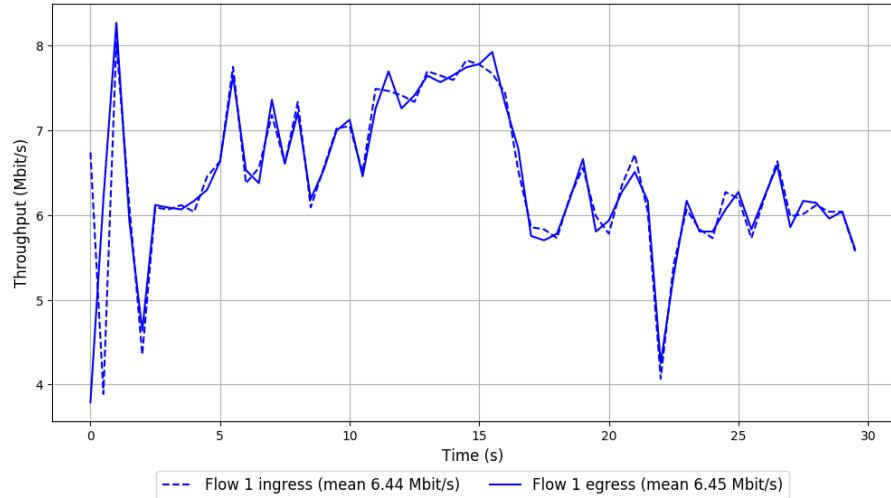


Run 3: Statistics of TaoVA-100x

```
Start at: 2017-08-21 01:32:46
End at: 2017-08-21 01:33:17
Local clock offset: 4.405 ms
Remote clock offset: -19.029 ms

# Below is generated by plot.py at 2017-08-21 01:37:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.45 Mbit/s
95th percentile per-packet one-way delay: 48.347 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 6.45 Mbit/s
95th percentile per-packet one-way delay: 48.347 ms
Loss rate: 0.08%
```

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

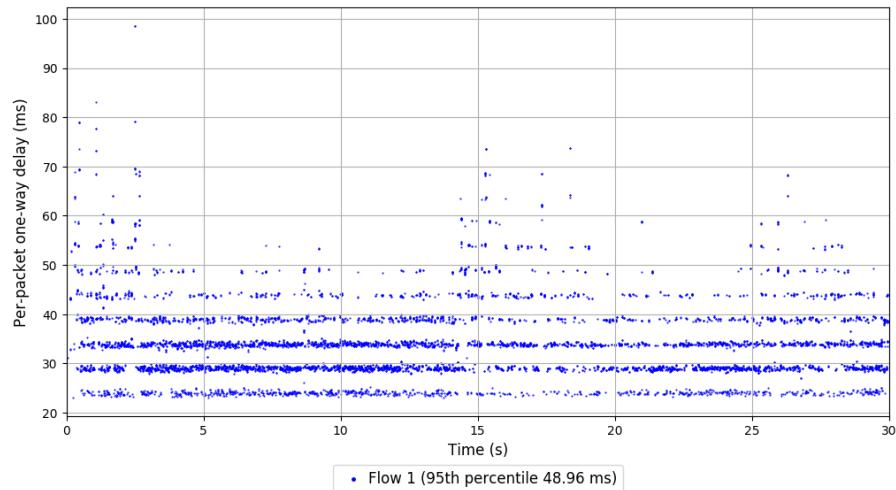
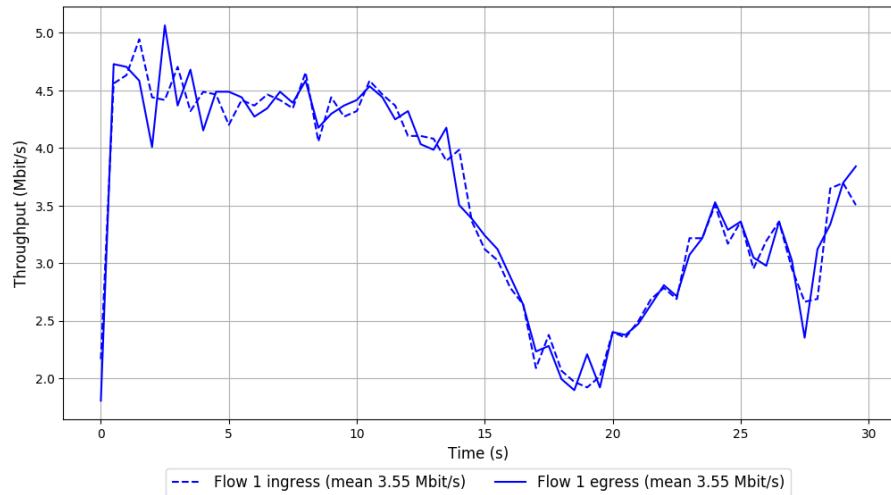


Run 1: Statistics of TCP Vegas

```
Start at: 2017-08-21 00:37:31
End at: 2017-08-21 00:38:01
Local clock offset: 1.209 ms
Remote clock offset: -20.433 ms

# Below is generated by plot.py at 2017-08-21 01:37:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.55 Mbit/s
95th percentile per-packet one-way delay: 48.958 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 3.55 Mbit/s
95th percentile per-packet one-way delay: 48.958 ms
Loss rate: 0.02%
```

Run 1: Report of TCP Vegas — Data Link

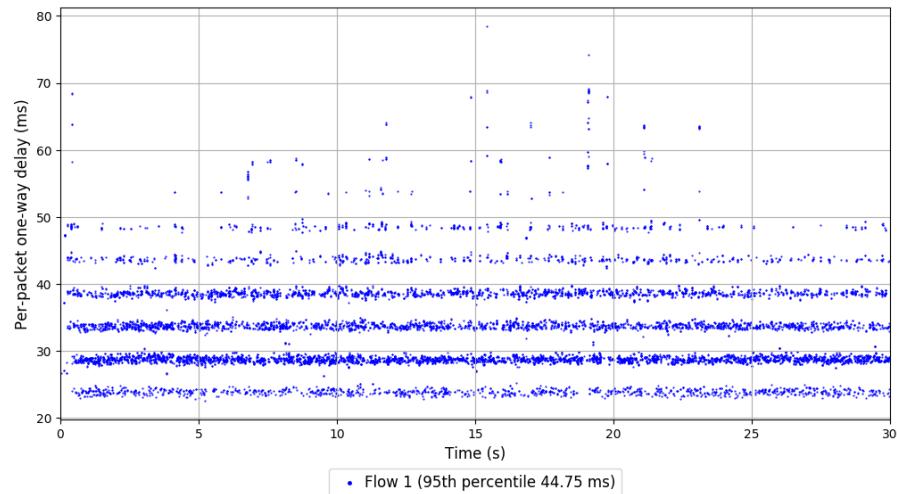
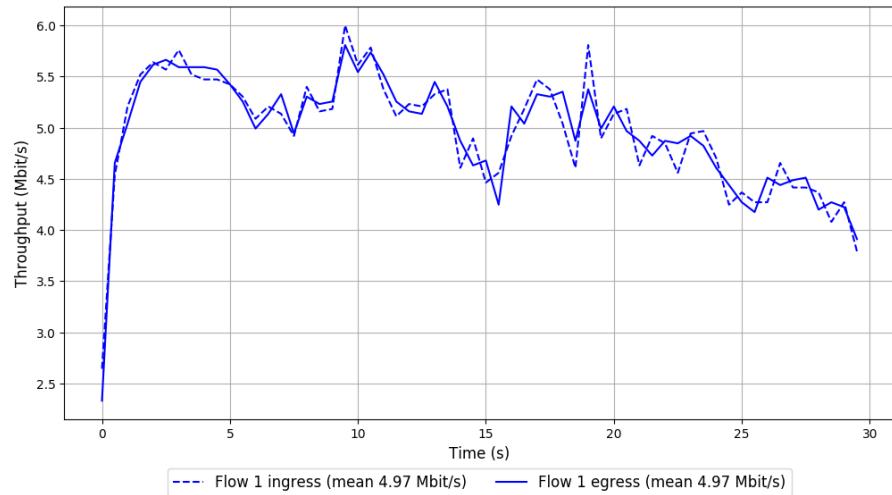


Run 2: Statistics of TCP Vegas

```
Start at: 2017-08-21 00:59:41
End at: 2017-08-21 01:00:11
Local clock offset: 4.055 ms
Remote clock offset: -19.861 ms

# Below is generated by plot.py at 2017-08-21 01:37:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.97 Mbit/s
95th percentile per-packet one-way delay: 44.751 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 4.97 Mbit/s
95th percentile per-packet one-way delay: 44.751 ms
Loss rate: 0.03%
```

Run 2: Report of TCP Vegas — Data Link

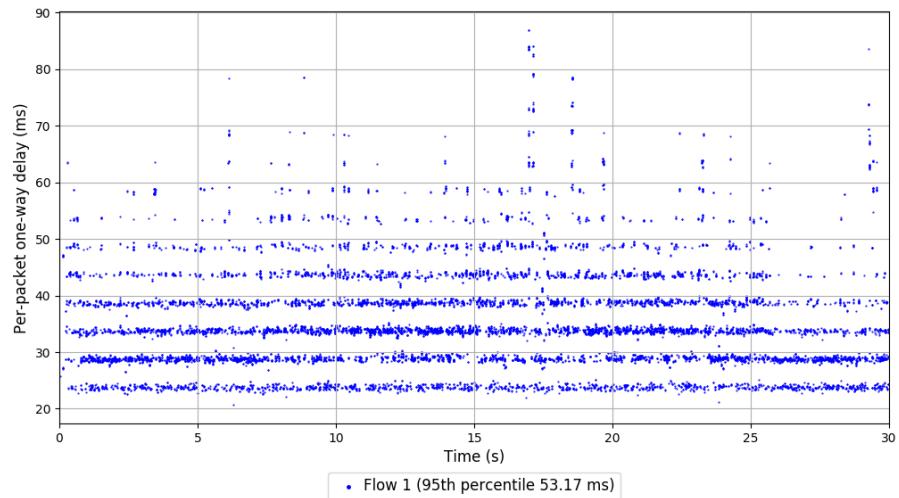
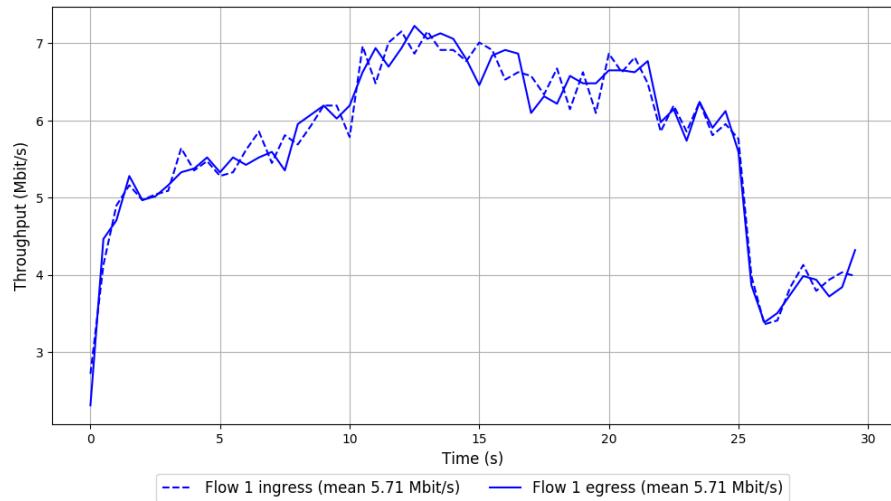


Run 3: Statistics of TCP Vegas

```
Start at: 2017-08-21 01:21:36
End at: 2017-08-21 01:22:06
Local clock offset: 5.107 ms
Remote clock offset: -20.665 ms

# Below is generated by plot.py at 2017-08-21 01:37:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.71 Mbit/s
95th percentile per-packet one-way delay: 53.173 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 5.71 Mbit/s
95th percentile per-packet one-way delay: 53.173 ms
Loss rate: 0.16%
```

Run 3: Report of TCP Vegas — Data Link

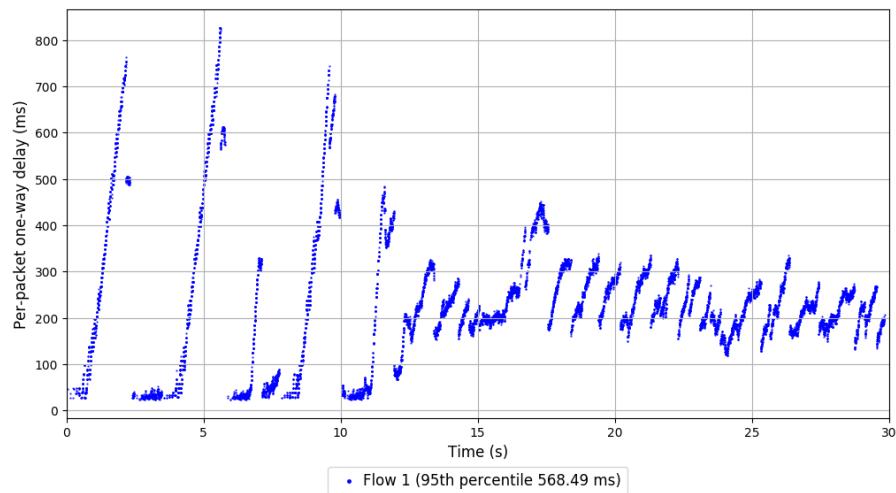
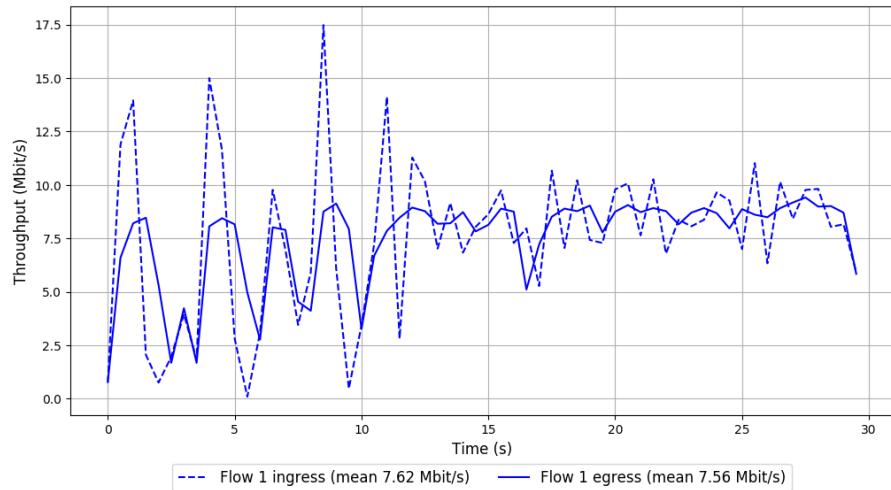


Run 1: Statistics of Verus

```
Start at: 2017-08-21 00:40:20
End at: 2017-08-21 00:40:50
Local clock offset: 2.254 ms
Remote clock offset: -20.512 ms

# Below is generated by plot.py at 2017-08-21 01:37:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 568.490 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 568.490 ms
Loss rate: 0.90%
```

Run 1: Report of Verus — Data Link

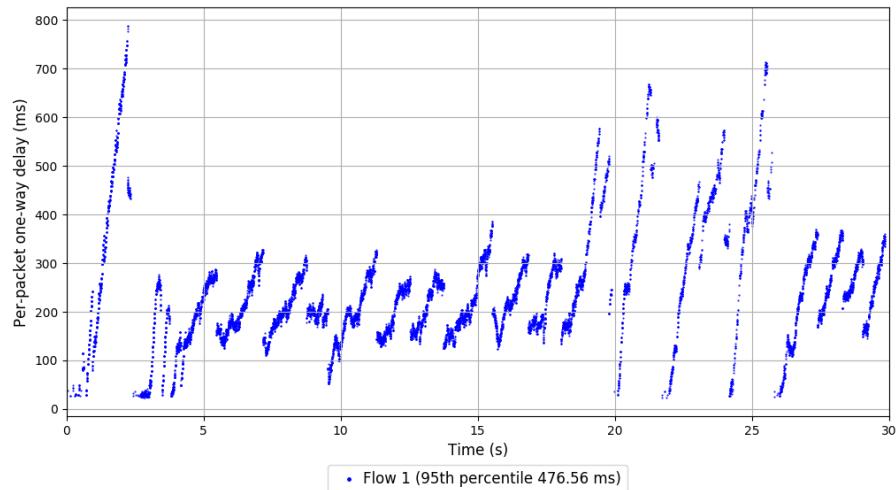
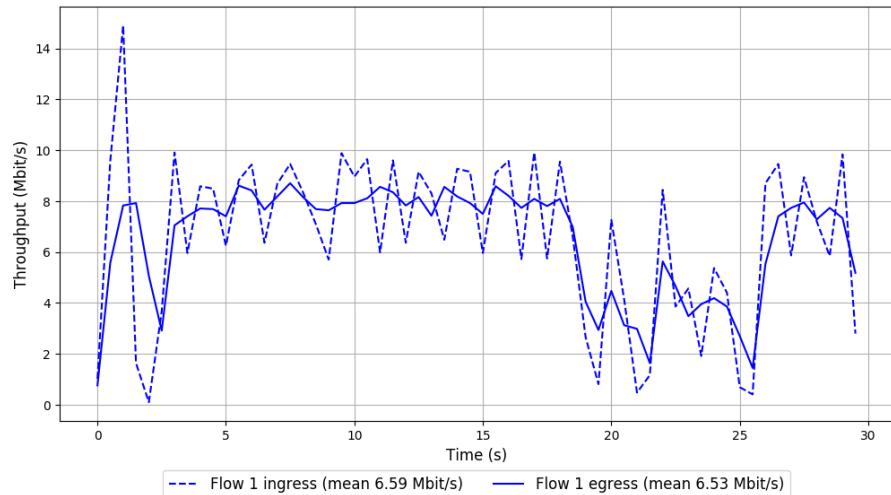


Run 2: Statistics of Verus

```
Start at: 2017-08-21 01:02:41
End at: 2017-08-21 01:03:11
Local clock offset: 4.682 ms
Remote clock offset: -20.302 ms

# Below is generated by plot.py at 2017-08-21 01:37:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.53 Mbit/s
95th percentile per-packet one-way delay: 476.564 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 6.53 Mbit/s
95th percentile per-packet one-way delay: 476.564 ms
Loss rate: 1.07%
```

Run 2: Report of Verus — Data Link

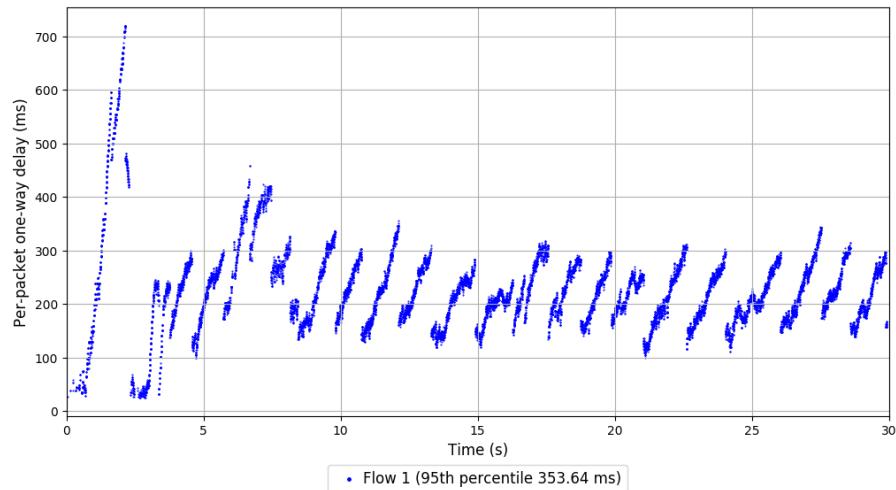
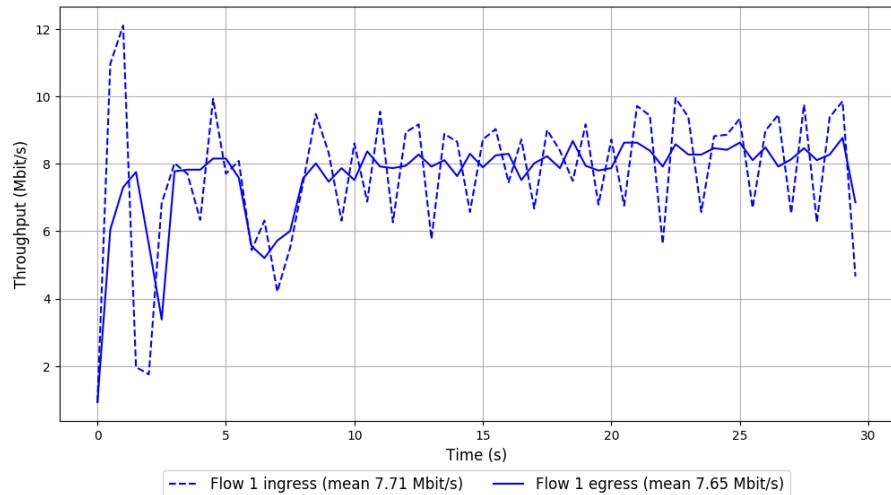


Run 3: Statistics of Verus

```
Start at: 2017-08-21 01:23:55
End at: 2017-08-21 01:24:25
Local clock offset: 0.72 ms
Remote clock offset: -19.759 ms

# Below is generated by plot.py at 2017-08-21 01:37:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.65 Mbit/s
95th percentile per-packet one-way delay: 353.645 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 7.65 Mbit/s
95th percentile per-packet one-way delay: 353.645 ms
Loss rate: 0.76%
```

Run 3: Report of Verus — Data Link

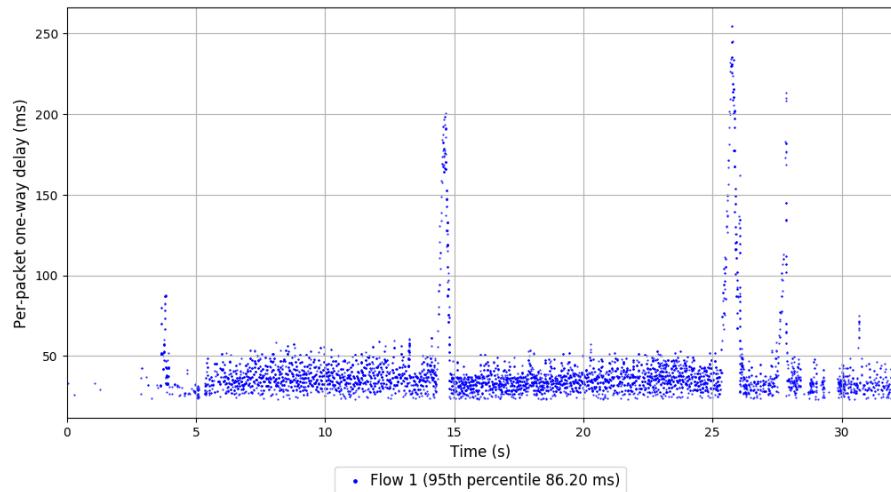
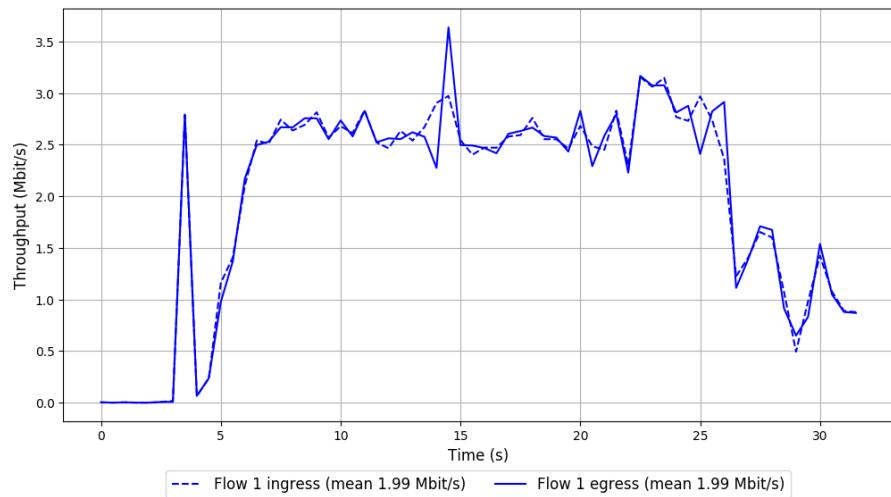


```
Run 1: Statistics of WebRTC media

Start at: 2017-08-21 00:32:42
End at: 2017-08-21 00:33:12
Local clock offset: 0.519 ms
Remote clock offset: -20.858 ms

# Below is generated by plot.py at 2017-08-21 01:37:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 86.203 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 86.203 ms
Loss rate: 0.07%
```

Run 1: Report of WebRTC media — Data Link

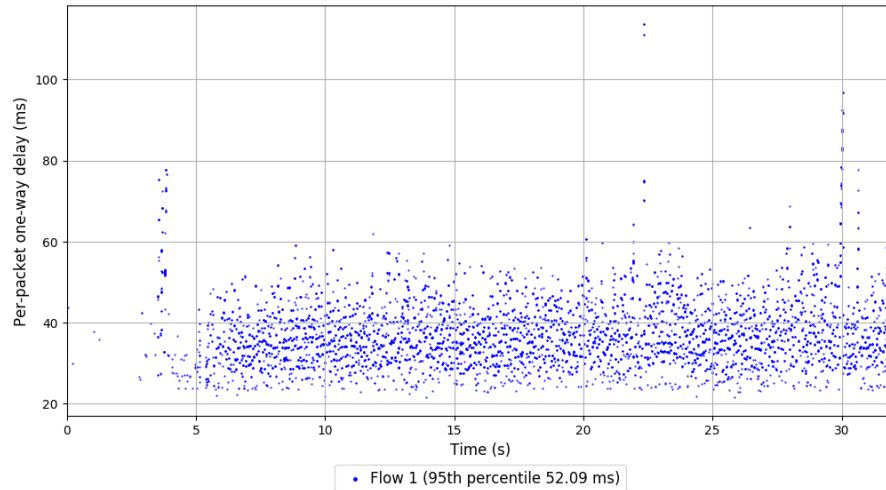
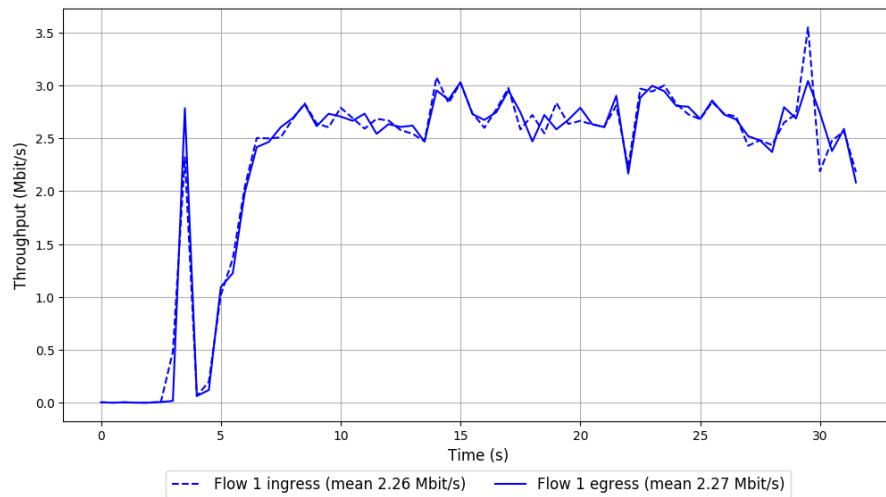


Run 2: Statistics of WebRTC media

```
Start at: 2017-08-21 00:54:24
End at: 2017-08-21 00:54:54
Local clock offset: 1.335 ms
Remote clock offset: -22.006 ms

# Below is generated by plot.py at 2017-08-21 01:37:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 52.090 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 52.090 ms
Loss rate: 0.18%
```

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

```
Start at: 2017-08-21 01:16:33
End at: 2017-08-21 01:17:03
Local clock offset: 1.804 ms
Remote clock offset: -20.079 ms

# Below is generated by plot.py at 2017-08-21 01:37:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 55.614 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 55.614 ms
Loss rate: 0.10%
```

Run 3: Report of WebRTC media — Data Link

