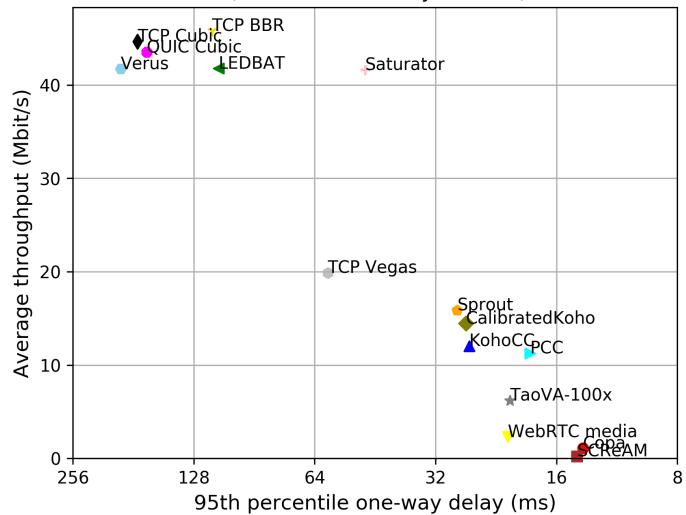


Pantheon Report

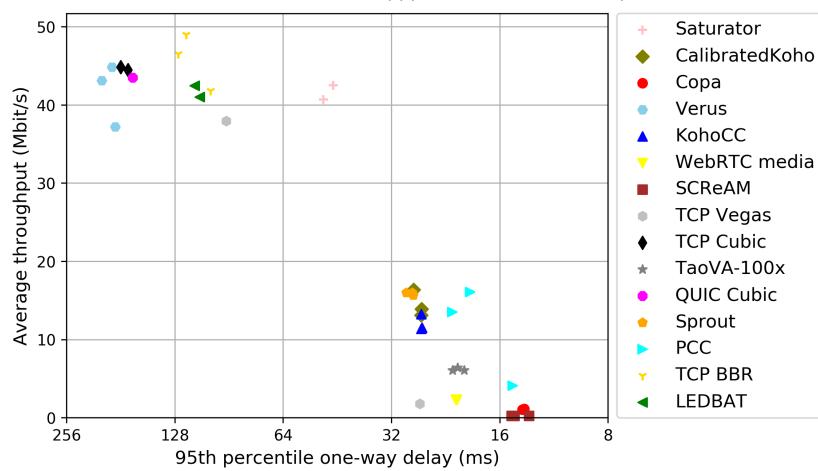
Generated at 2017-08-21 06:17:37 (UTC).
Data path: AWS California 1 Ethernet (*local*) →Stanford ppp0 (*remote*).
Repeated the test of 15 congestion control schemes 3 times.
Each test lasted for 30 seconds running 1 flow.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).
NTP offsets were measured against `time.stanford.edu` 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  
  M scripts/merge-tunnel-logs  
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1  
  M receiver/src/buffer.h  
  M receiver/src/core.cpp  
  M sender/src/buffer.h  
  M sender/src/core.cpp  
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42  
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885  
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681  
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce  
  M src/examples/cellsim.cc  
  M src/examples/sproutbt2.cc  
  M src/network/sproutconn.cc  
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494  
  M src/verus.hpp  
  M tools/plot.py  
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from AWS California 1 Ethernet to Stanford ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



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



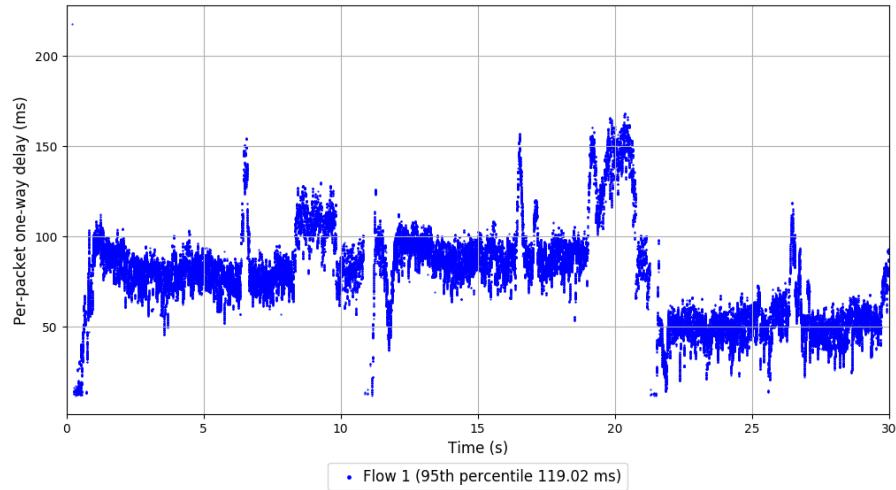
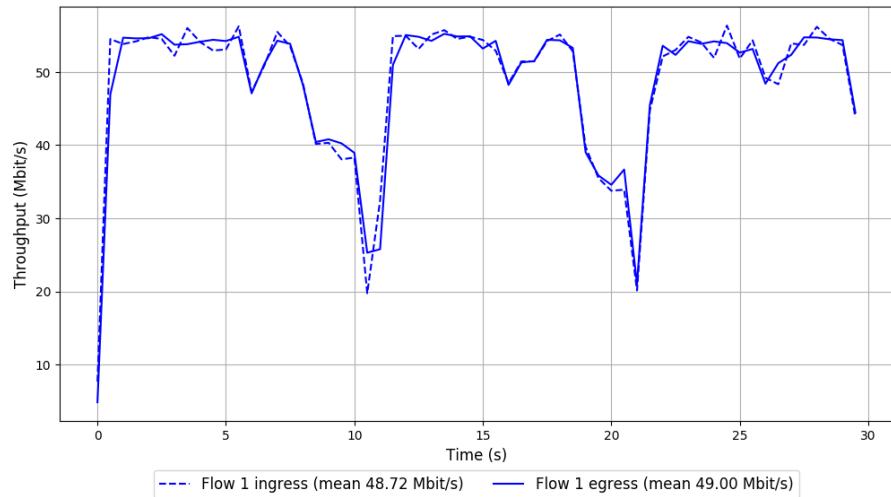
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	45.78	115.36	0.18
CalibratedKoho	3	14.46	26.88	0.00
Copa	3	1.08	13.74	0.00
TCP Cubic	2	44.66	176.93	0.45
KohoCC	3	12.04	26.39	0.00
LEDBAT	2	41.75	111.08	0.22
PCC	3	11.25	18.59	0.00
QUIC Cubic	1	43.51	167.54	0.39
Saturator	2	41.59	47.92	0.03
SCReAM	3	0.22	14.22	0.00
Sprout	3	15.88	28.30	0.00
TaoVA-100x	3	6.18	20.89	0.00
TCP Vegas	2	19.86	59.40	0.00
Verus	3	41.72	194.55	15.81
WebRTC media	3	2.30	21.15	0.04

Run 1: Statistics of TCP BBR

```
Start at: 2017-08-21 05:28:38
End at: 2017-08-21 05:29:08
Local clock offset: 0.39 ms
Remote clock offset: -1.25 ms

# Below is generated by plot.py at 2017-08-21 06:16:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.00 Mbit/s
95th percentile per-packet one-way delay: 119.015 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 49.00 Mbit/s
95th percentile per-packet one-way delay: 119.015 ms
Loss rate: 0.15%
```

Run 1: Report of TCP BBR — Data Link

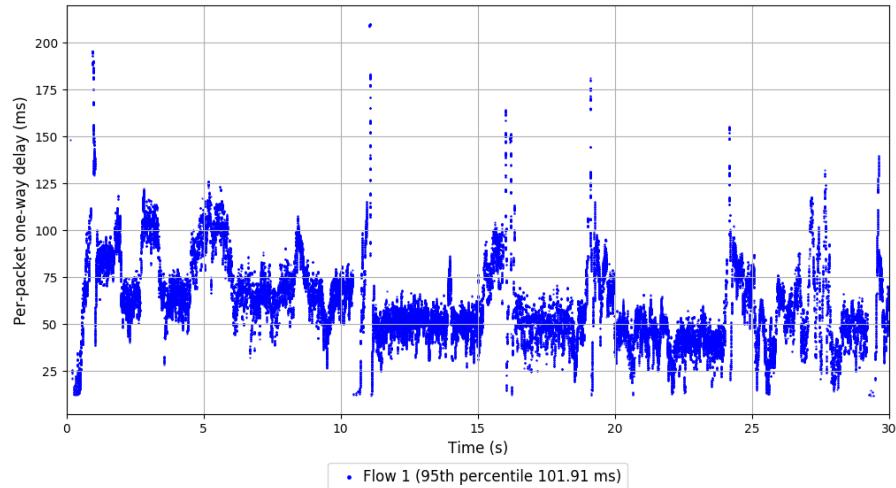
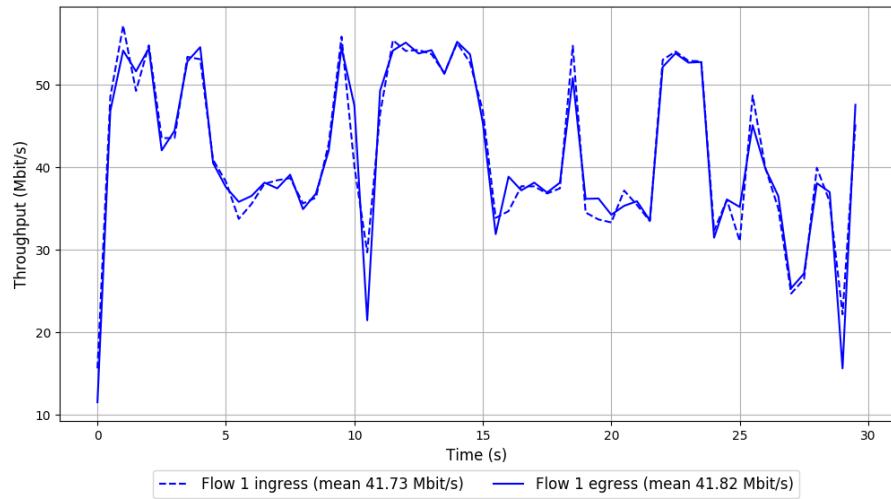


Run 2: Statistics of TCP BBR

```
Start at: 2017-08-21 05:46:25
End at: 2017-08-21 05:46:55
Local clock offset: 0.49 ms
Remote clock offset: -1.095 ms

# Below is generated by plot.py at 2017-08-21 06:16:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.82 Mbit/s
95th percentile per-packet one-way delay: 101.907 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 41.82 Mbit/s
95th percentile per-packet one-way delay: 101.907 ms
Loss rate: 0.27%
```

Run 2: Report of TCP BBR — Data Link

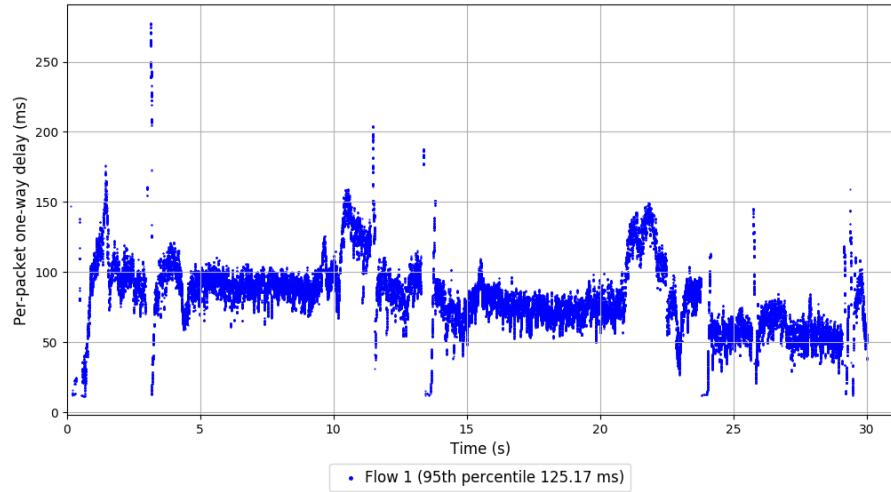
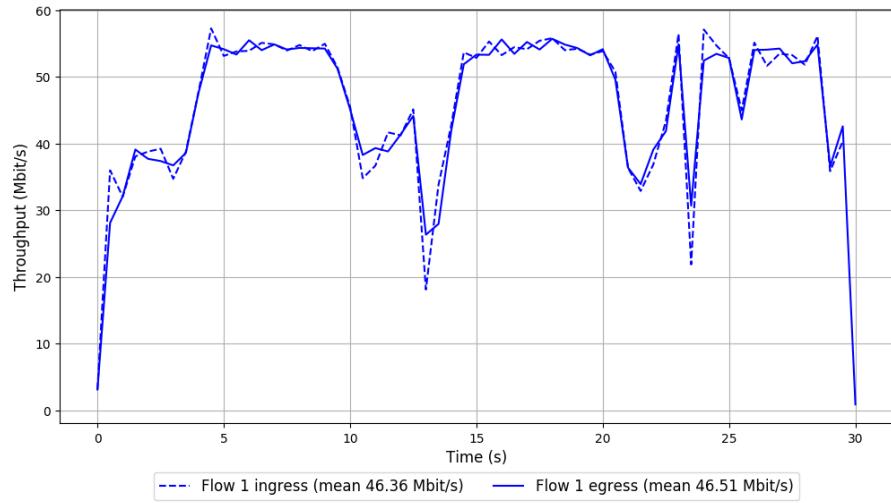


Run 3: Statistics of TCP BBR

```
Start at: 2017-08-21 06:04:16
End at: 2017-08-21 06:04:46
Local clock offset: 0.559 ms
Remote clock offset: -1.18 ms

# Below is generated by plot.py at 2017-08-21 06:16:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.51 Mbit/s
95th percentile per-packet one-way delay: 125.171 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 46.51 Mbit/s
95th percentile per-packet one-way delay: 125.171 ms
Loss rate: 0.12%
```

Run 3: Report of TCP BBR — Data Link

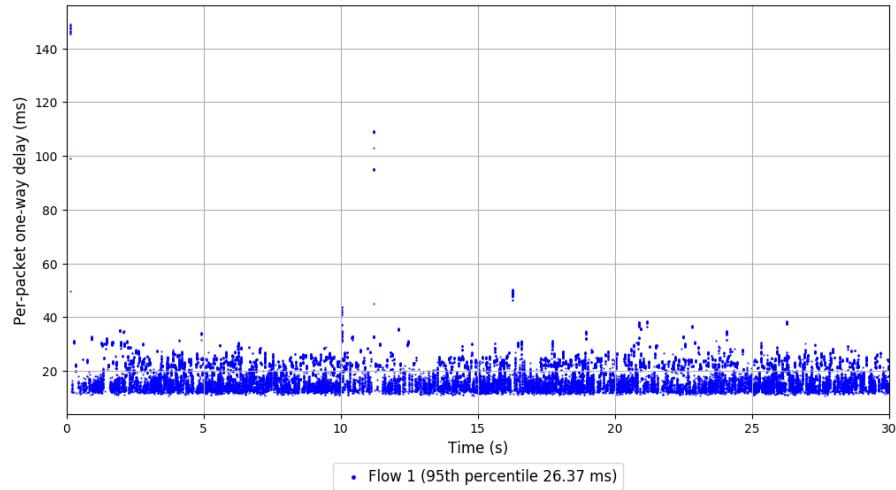
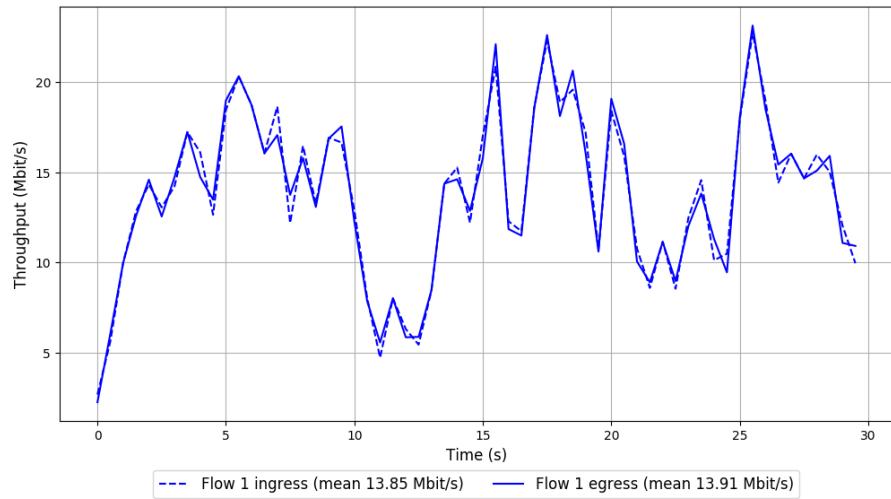


```
Run 1: Statistics of CalibratedKoho
```

```
Start at: 2017-08-21 05:36:58
End at: 2017-08-21 05:37:28
Local clock offset: 0.451 ms
Remote clock offset: -1.178 ms

# Below is generated by plot.py at 2017-08-21 06:16:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.91 Mbit/s
95th percentile per-packet one-way delay: 26.369 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.91 Mbit/s
95th percentile per-packet one-way delay: 26.369 ms
Loss rate: 0.00%
```

Run 1: Report of CalibratedKoho — Data Link

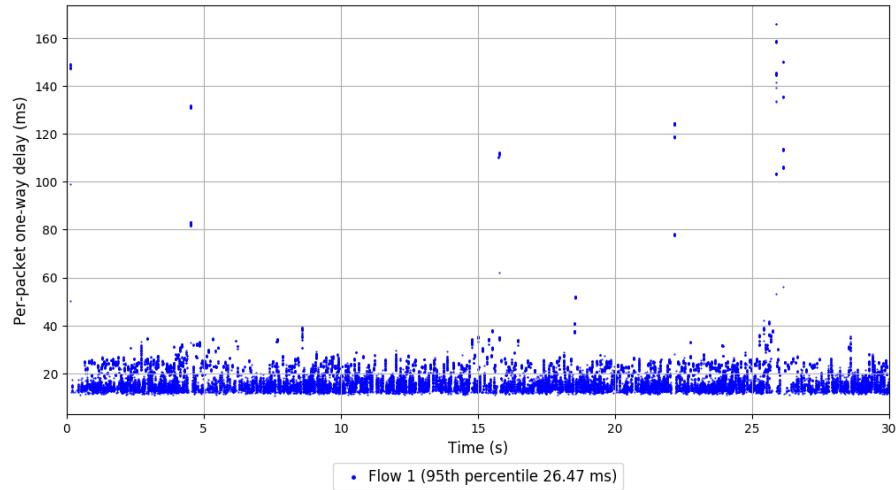
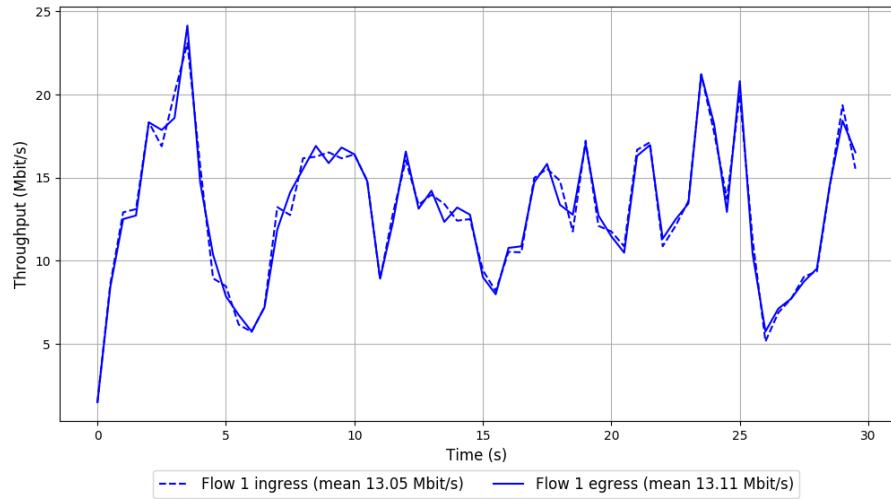


```
Run 2: Statistics of CalibratedKoho
```

```
Start at: 2017-08-21 05:54:47
End at: 2017-08-21 05:55:17
Local clock offset: 0.567 ms
Remote clock offset: -1.192 ms

# Below is generated by plot.py at 2017-08-21 06:16:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.11 Mbit/s
95th percentile per-packet one-way delay: 26.471 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.11 Mbit/s
95th percentile per-packet one-way delay: 26.471 ms
Loss rate: 0.00%
```

Run 2: Report of CalibratedKoho — Data Link

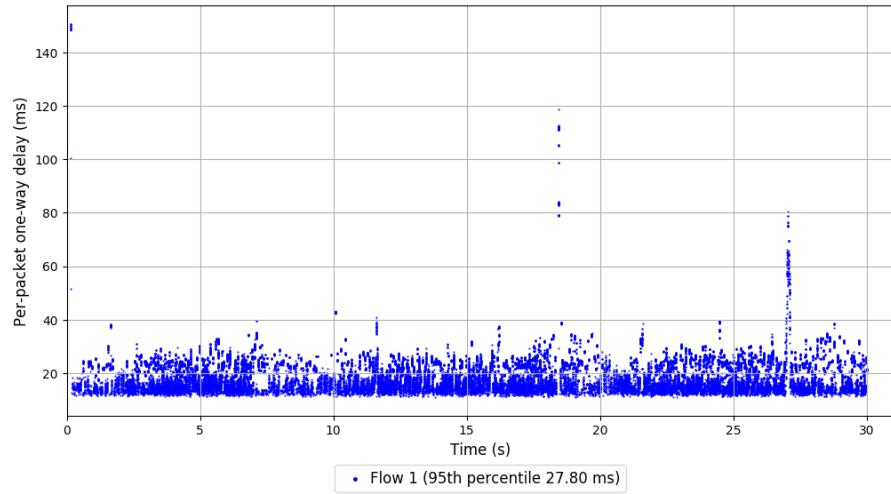
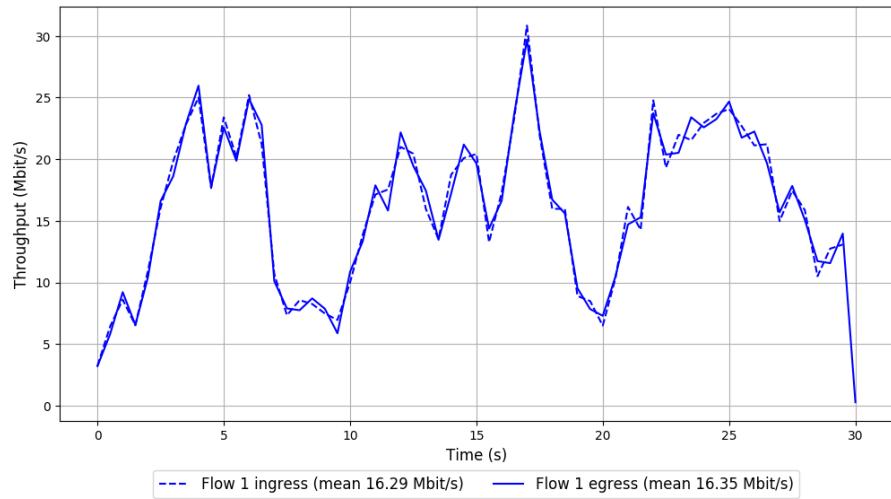


Run 3: Statistics of CalibratedKoho

```
Start at: 2017-08-21 06:12:40
End at: 2017-08-21 06:13:10
Local clock offset: 0.606 ms
Remote clock offset: -1.056 ms

# Below is generated by plot.py at 2017-08-21 06:16:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.35 Mbit/s
95th percentile per-packet one-way delay: 27.796 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 16.35 Mbit/s
95th percentile per-packet one-way delay: 27.796 ms
Loss rate: 0.00%
```

Run 3: Report of CalibratedKoho — Data Link

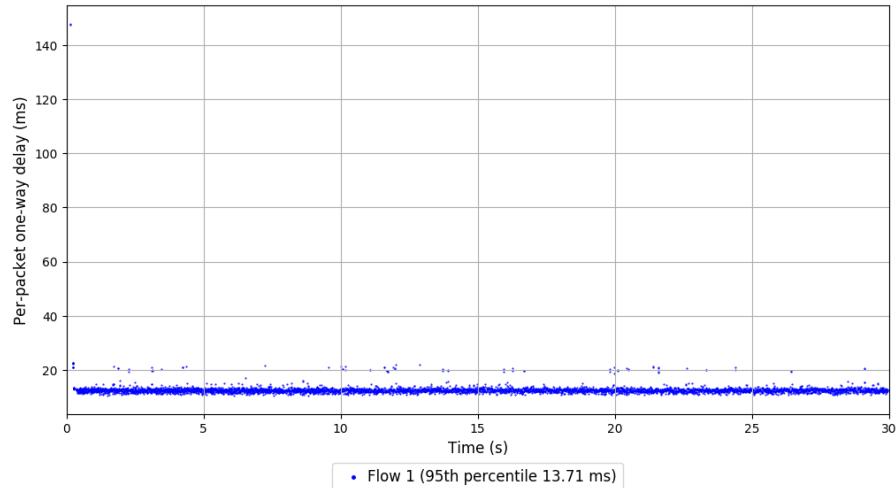
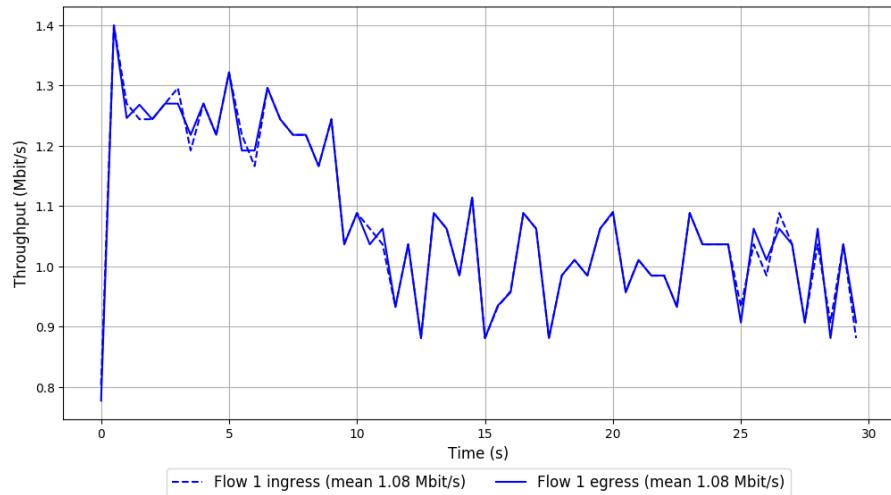


Run 1: Statistics of Copa

```
Start at: 2017-08-21 05:33:24
End at: 2017-08-21 05:33:54
Local clock offset: 0.335 ms
Remote clock offset: -1.118 ms

# Below is generated by plot.py at 2017-08-21 06:16:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 13.714 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 13.714 ms
Loss rate: 0.00%
```

Run 1: Report of Copa — Data Link

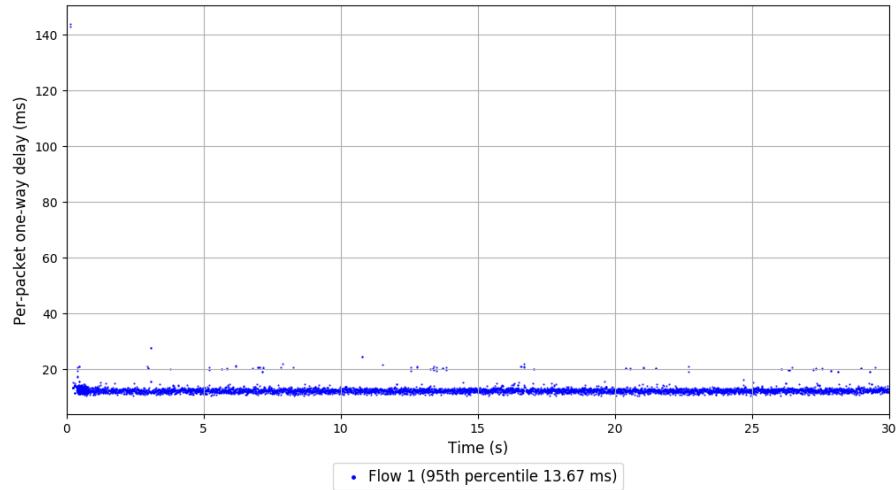
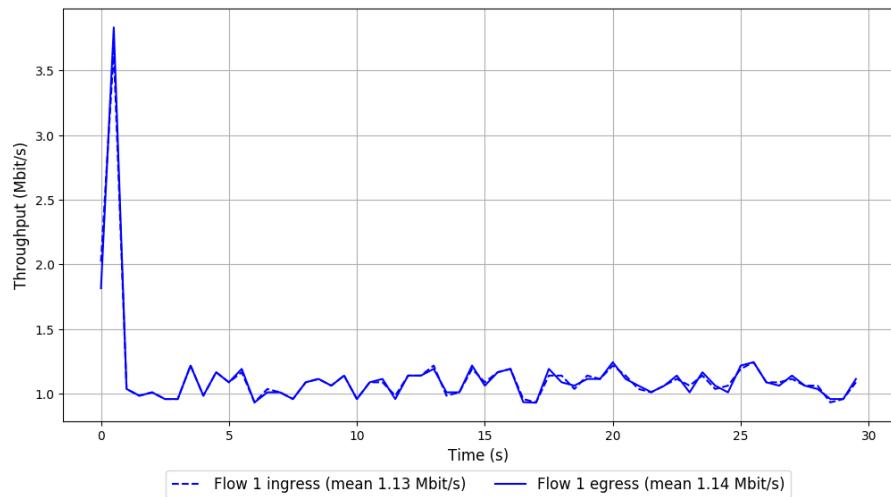


Run 2: Statistics of Copa

```
Start at: 2017-08-21 05:51:13
End at: 2017-08-21 05:51:43
Local clock offset: 0.533 ms
Remote clock offset: -1.192 ms

# Below is generated by plot.py at 2017-08-21 06:16:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 13.670 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 13.670 ms
Loss rate: 0.00%
```

Run 2: Report of Copa — Data Link

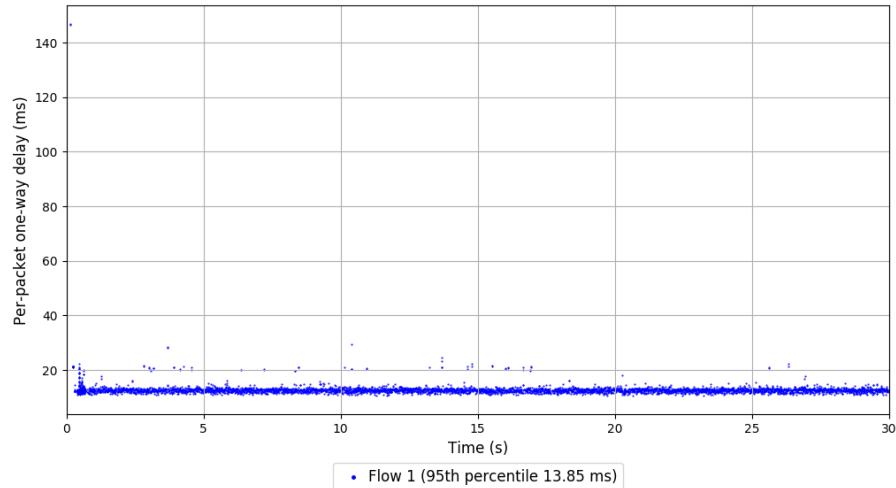
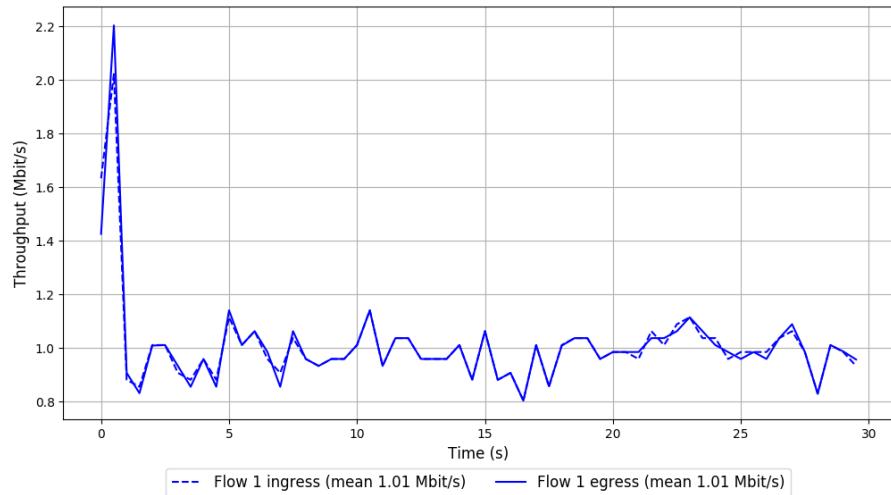


Run 3: Statistics of Copa

```
Start at: 2017-08-21 06:09:05
End at: 2017-08-21 06:09:36
Local clock offset: 0.653 ms
Remote clock offset: -1.012 ms

# Below is generated by plot.py at 2017-08-21 06:16:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 13.851 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 13.851 ms
Loss rate: 0.00%
```

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

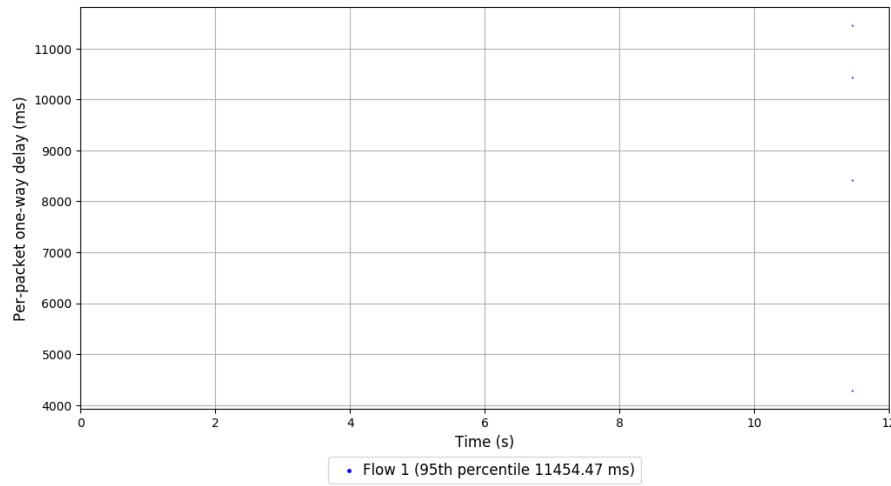
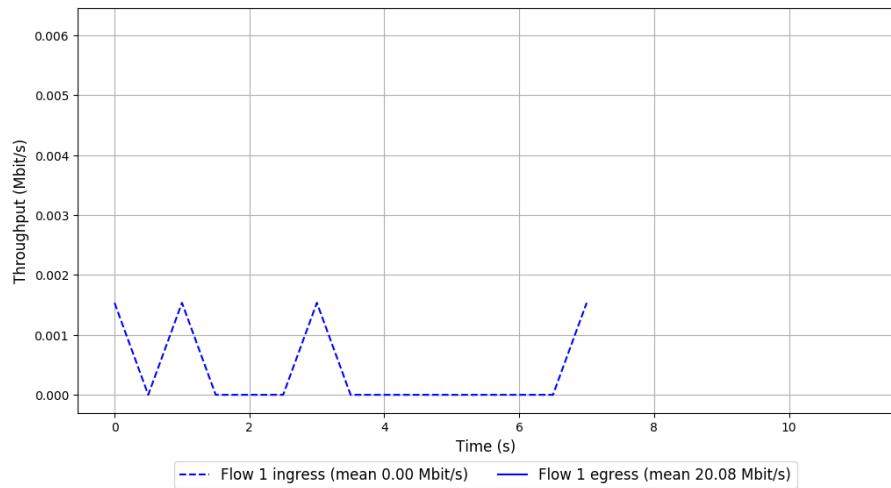
Start at: 2017-08-21 05:22:42

End at: 2017-08-21 05:23:12

Local clock offset: 0.341 ms

Remote clock offset: -1.245 ms

Run 1: Report of TCP Cubic — Data Link

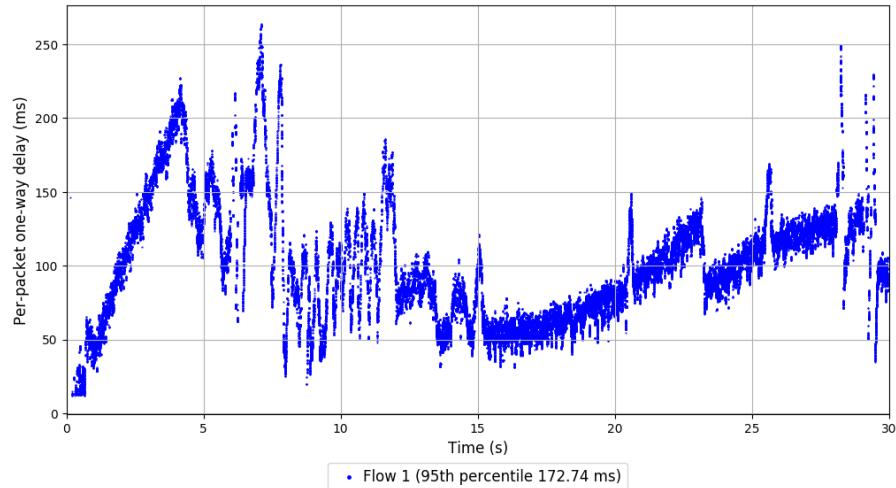
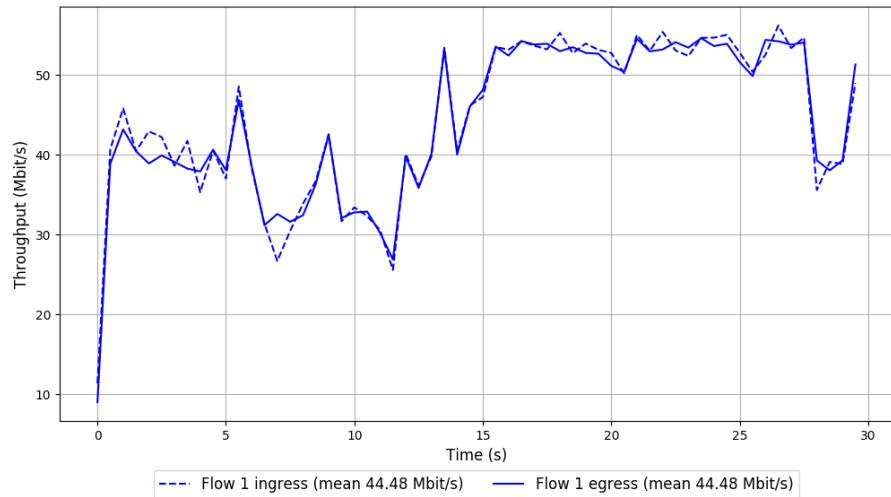


Run 2: Statistics of TCP Cubic

```
Start at: 2017-08-21 05:40:30
End at: 2017-08-21 05:41:00
Local clock offset: 0.384 ms
Remote clock offset: -1.171 ms

# Below is generated by plot.py at 2017-08-21 06:16:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.48 Mbit/s
95th percentile per-packet one-way delay: 172.739 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 44.48 Mbit/s
95th percentile per-packet one-way delay: 172.739 ms
Loss rate: 0.43%
```

Run 2: Report of TCP Cubic — Data Link

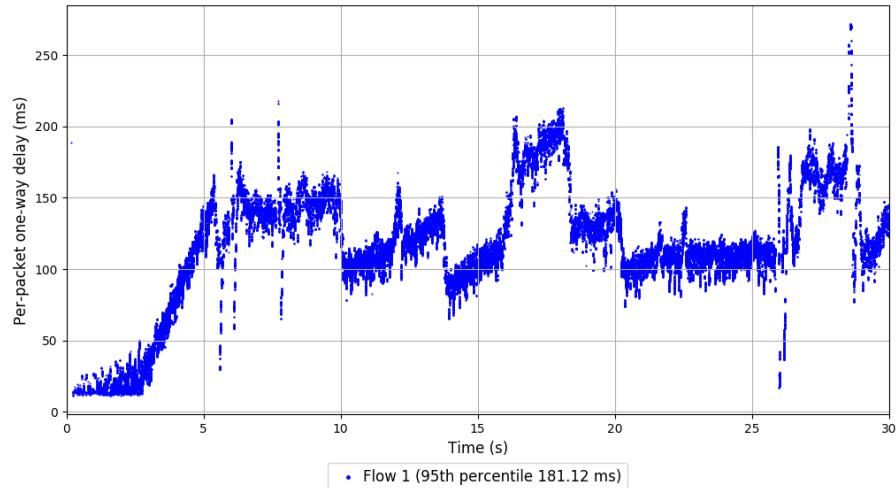
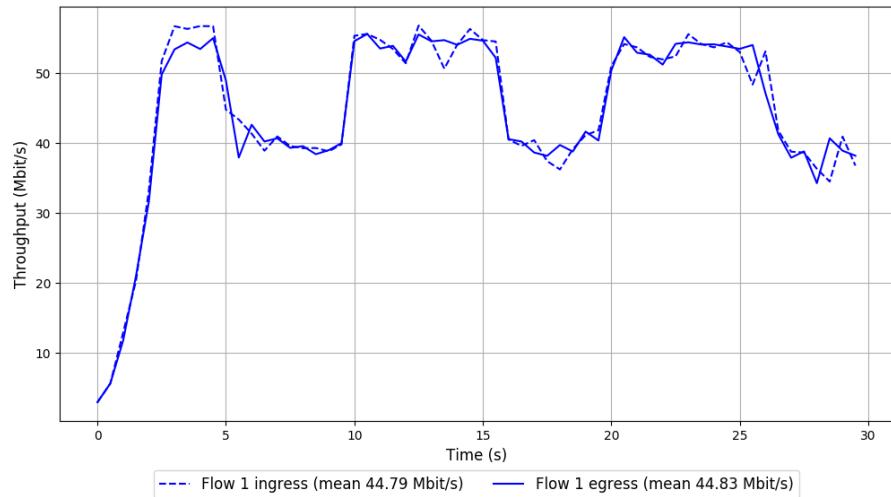


Run 3: Statistics of TCP Cubic

```
Start at: 2017-08-21 05:58:19
End at: 2017-08-21 05:58:49
Local clock offset: 0.517 ms
Remote clock offset: -1.212 ms

# Below is generated by plot.py at 2017-08-21 06:16:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.83 Mbit/s
95th percentile per-packet one-way delay: 181.122 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 44.83 Mbit/s
95th percentile per-packet one-way delay: 181.122 ms
Loss rate: 0.46%
```

Run 3: Report of TCP Cubic — Data Link

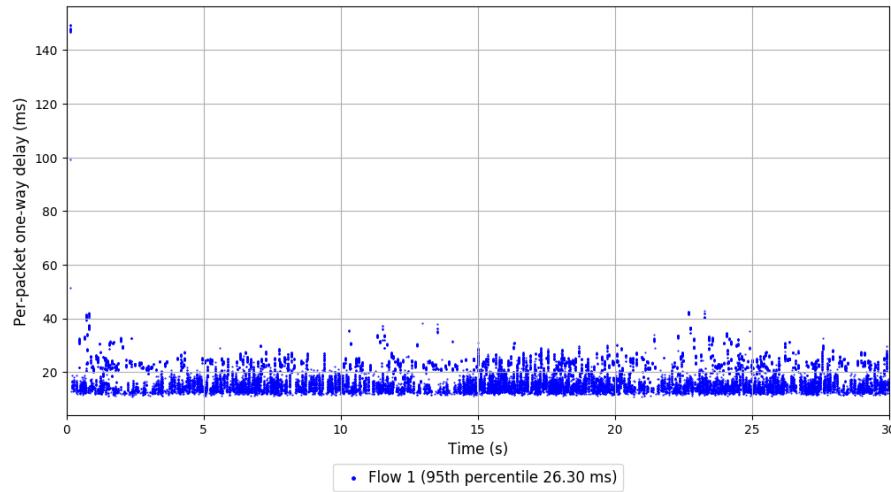
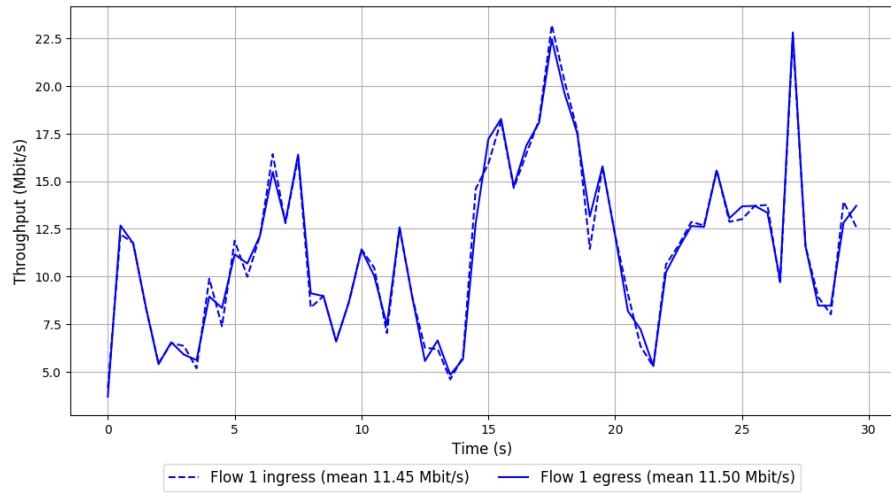


```
Run 1: Statistics of KohoCC
```

```
Start at: 2017-08-21 05:29:51
End at: 2017-08-21 05:30:21
Local clock offset: 0.319 ms
Remote clock offset: -1.266 ms

# Below is generated by plot.py at 2017-08-21 06:16:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.50 Mbit/s
95th percentile per-packet one-way delay: 26.302 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.50 Mbit/s
95th percentile per-packet one-way delay: 26.302 ms
Loss rate: 0.00%
```

Run 1: Report of KohoCC — Data Link

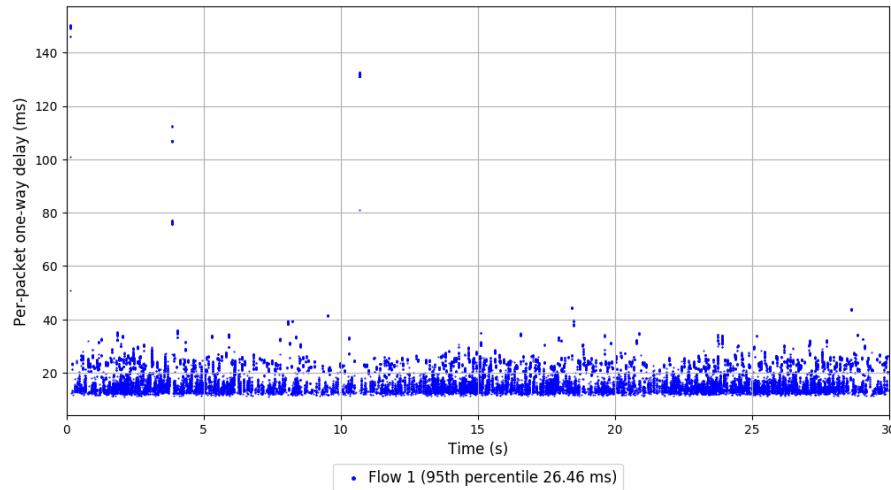
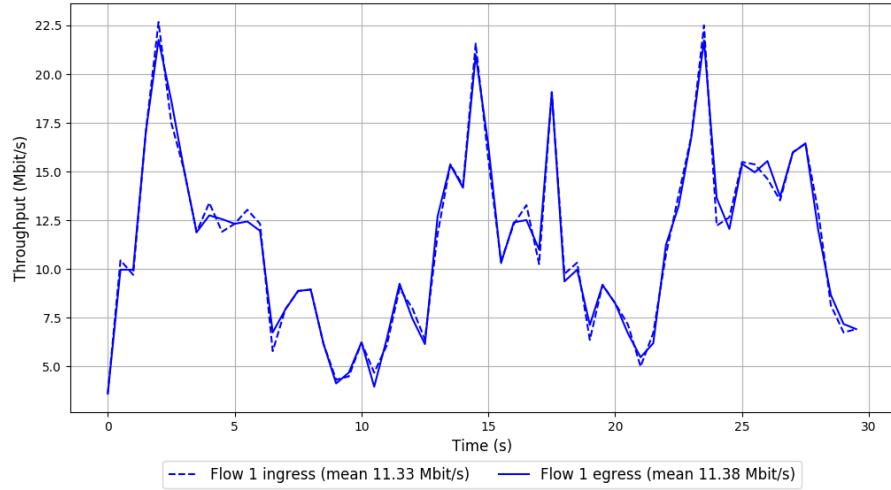


Run 2: Statistics of KohoCC

```
Start at: 2017-08-21 05:47:37
End at: 2017-08-21 05:48:07
Local clock offset: 0.424 ms
Remote clock offset: -1.205 ms

# Below is generated by plot.py at 2017-08-21 06:16:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.38 Mbit/s
95th percentile per-packet one-way delay: 26.457 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.38 Mbit/s
95th percentile per-packet one-way delay: 26.457 ms
Loss rate: 0.00%
```

Run 2: Report of KohoCC — Data Link

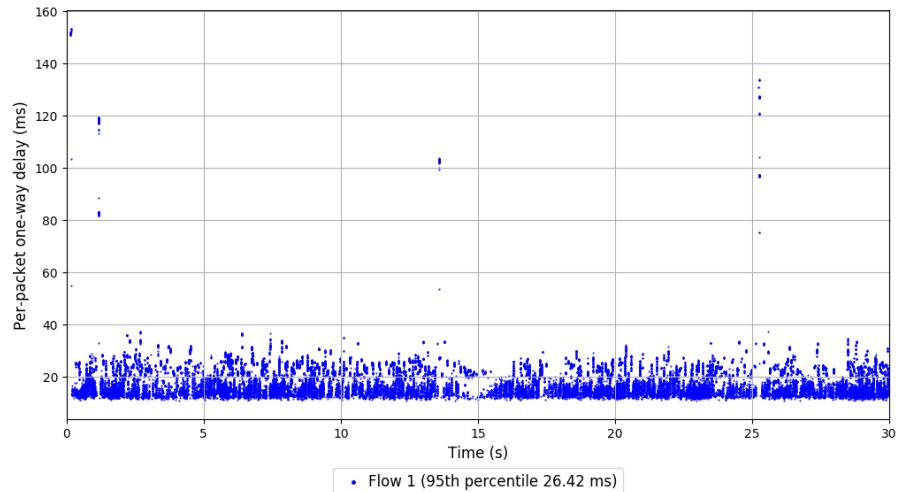
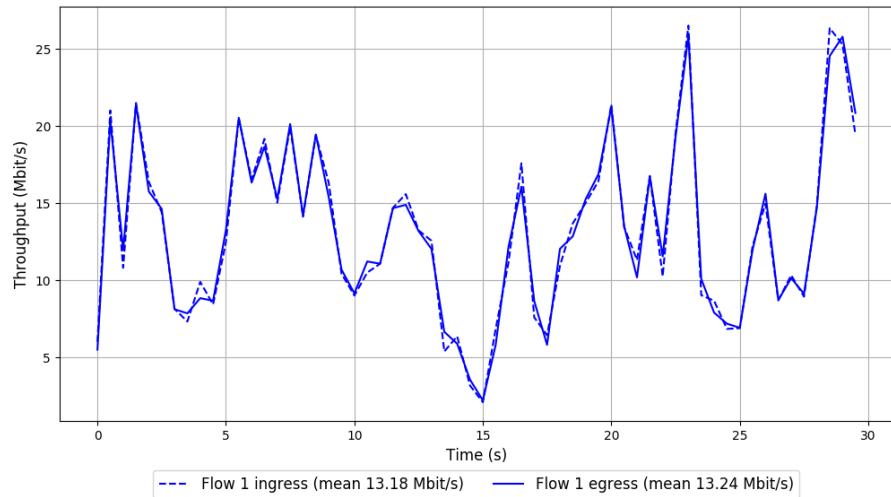


Run 3: Statistics of KohoCC

```
Start at: 2017-08-21 06:05:29
End at: 2017-08-21 06:05:59
Local clock offset: 0.649 ms
Remote clock offset: -1.094 ms

# Below is generated by plot.py at 2017-08-21 06:16:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.24 Mbit/s
95th percentile per-packet one-way delay: 26.424 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.24 Mbit/s
95th percentile per-packet one-way delay: 26.424 ms
Loss rate: 0.00%
```

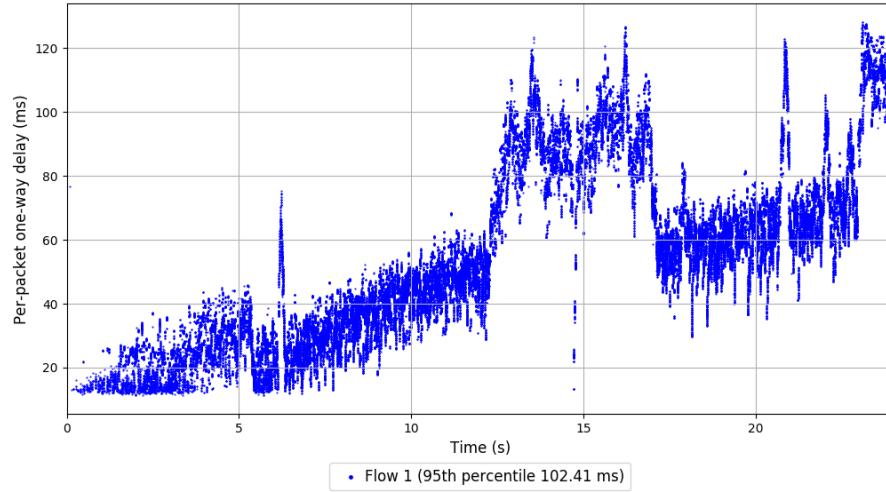
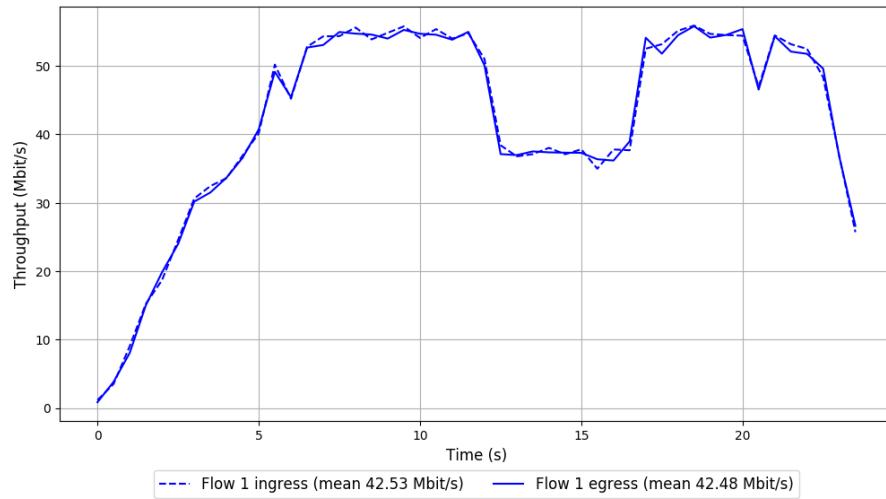
Run 3: Report of KohoCC — Data Link



Run 1: Statistics of LEDBAT

Start at: 2017-08-21 05:32:12
End at: 2017-08-21 05:32:42
Local clock offset: 0.418 ms
Remote clock offset: -1.232 ms

Run 1: Report of LEDBAT — Data Link

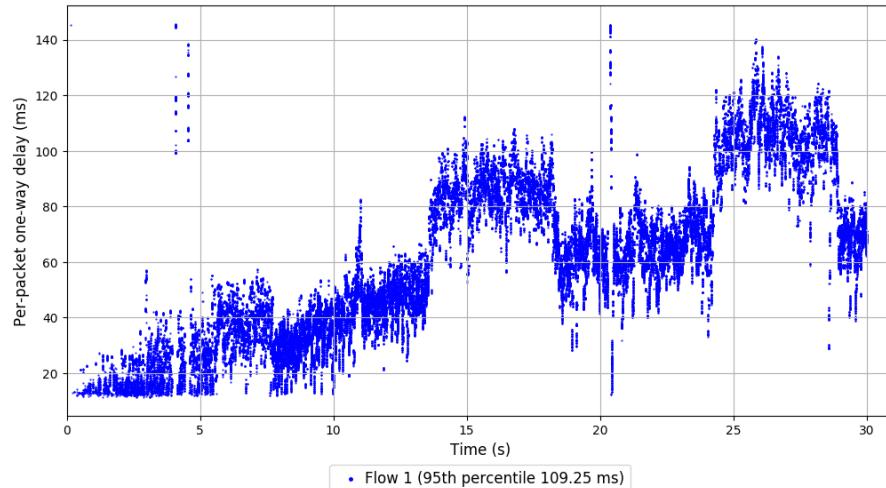
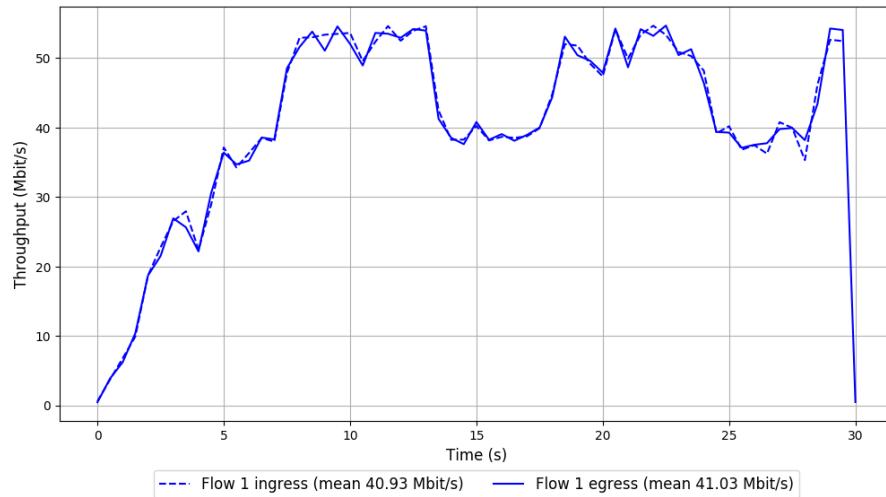


Run 2: Statistics of LEDBAT

```
Start at: 2017-08-21 05:50:00
End at: 2017-08-21 05:50:30
Local clock offset: 0.526 ms
Remote clock offset: -1.093 ms

# Below is generated by plot.py at 2017-08-21 06:16:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.03 Mbit/s
95th percentile per-packet one-way delay: 109.250 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 41.03 Mbit/s
95th percentile per-packet one-way delay: 109.250 ms
Loss rate: 0.17%
```

Run 2: Report of LEDBAT — Data Link

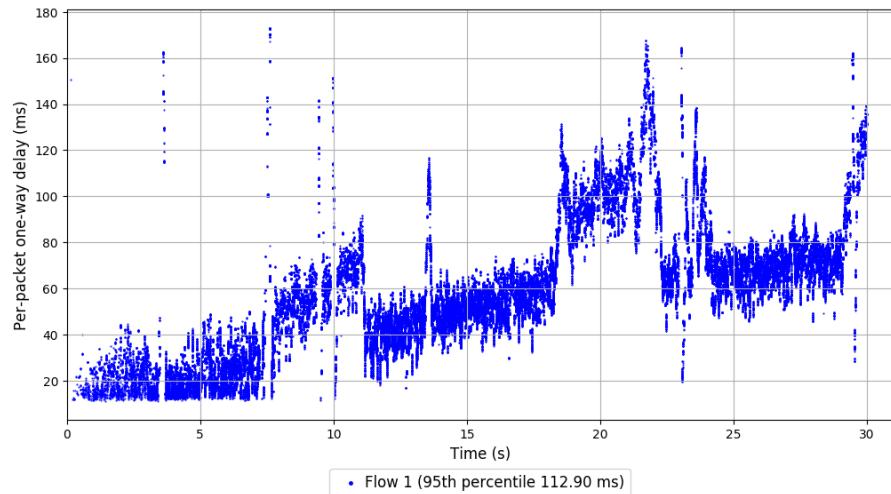
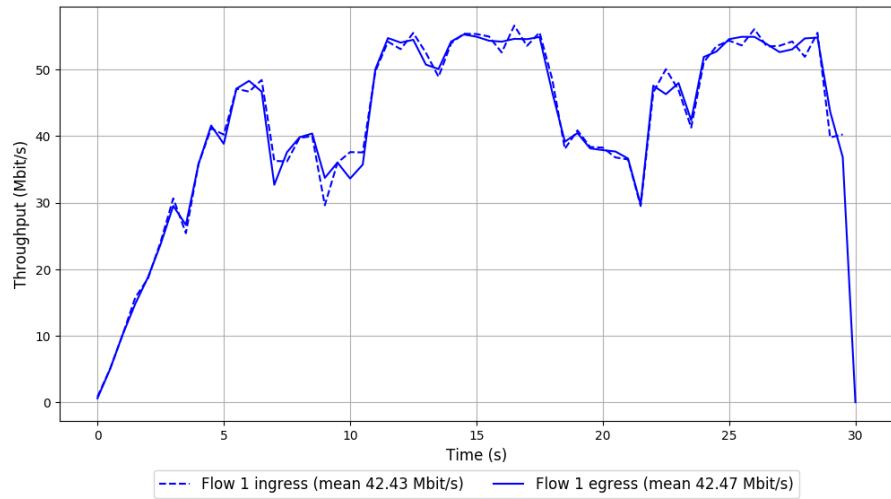


Run 3: Statistics of LEDBAT

```
Start at: 2017-08-21 06:07:52
End at: 2017-08-21 06:08:22
Local clock offset: 0.58 ms
Remote clock offset: -1.077 ms

# Below is generated by plot.py at 2017-08-21 06:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.47 Mbit/s
95th percentile per-packet one-way delay: 112.904 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 42.47 Mbit/s
95th percentile per-packet one-way delay: 112.904 ms
Loss rate: 0.26%
```

Run 3: Report of LEDBAT — Data Link

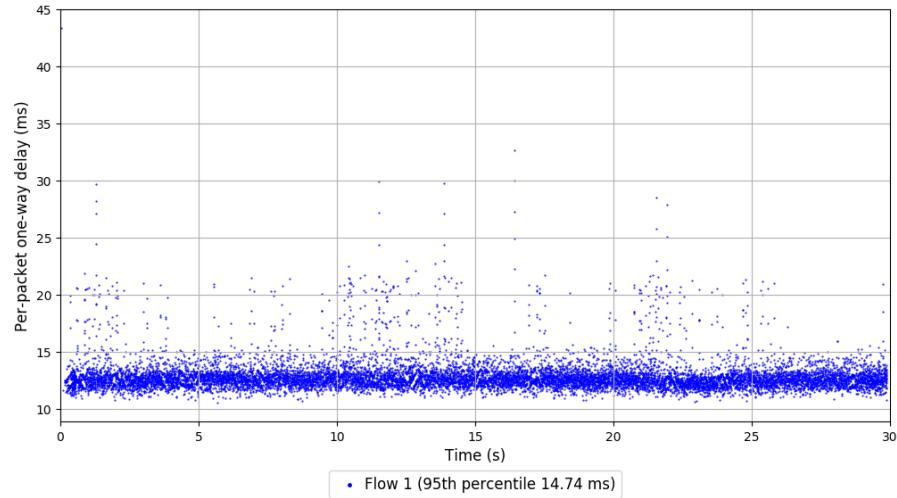
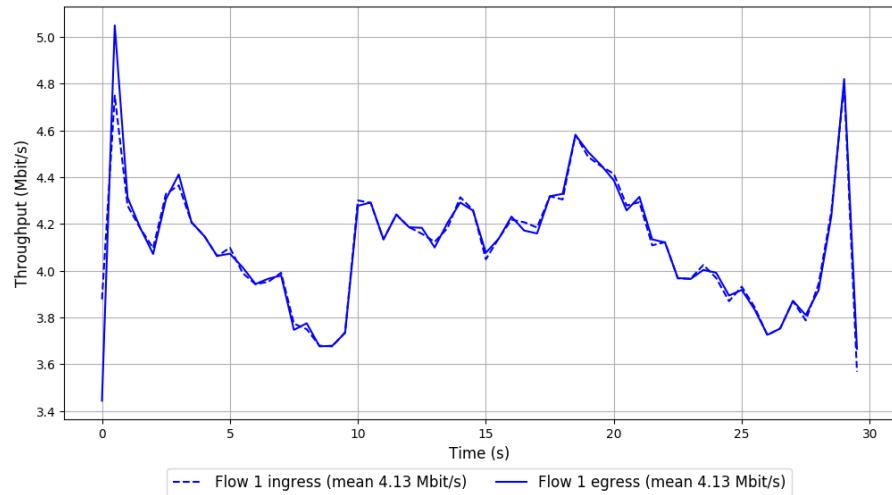


Run 1: Statistics of PCC

```
Start at: 2017-08-21 05:25:03
End at: 2017-08-21 05:25:33
Local clock offset: 0.244 ms
Remote clock offset: -1.273 ms

# Below is generated by plot.py at 2017-08-21 06:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.13 Mbit/s
95th percentile per-packet one-way delay: 14.741 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.13 Mbit/s
95th percentile per-packet one-way delay: 14.741 ms
Loss rate: 0.00%
```

Run 1: Report of PCC — Data Link

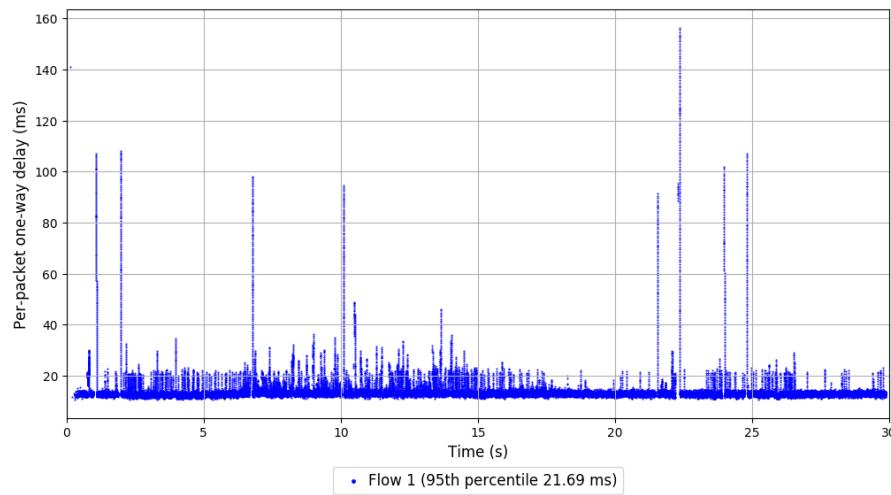
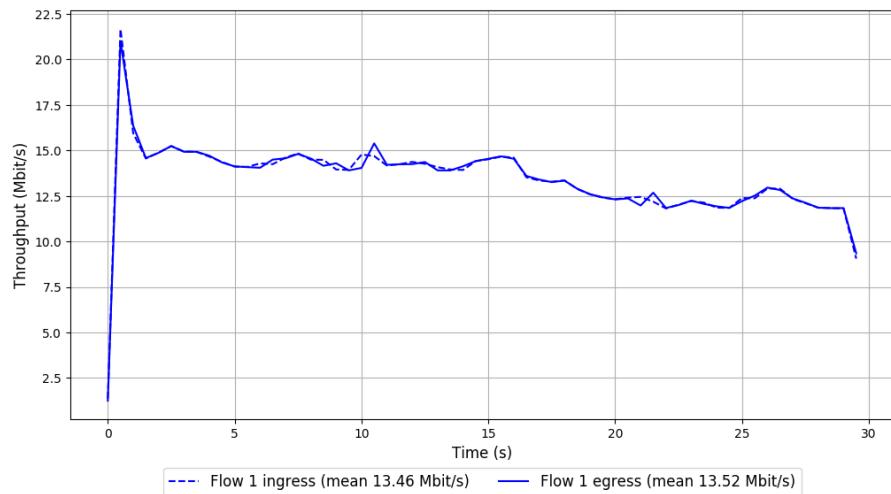


Run 2: Statistics of PCC

```
Start at: 2017-08-21 05:42:53
End at: 2017-08-21 05:43:23
Local clock offset: 0.468 ms
Remote clock offset: -1.175 ms

# Below is generated by plot.py at 2017-08-21 06:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.52 Mbit/s
95th percentile per-packet one-way delay: 21.688 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.52 Mbit/s
95th percentile per-packet one-way delay: 21.688 ms
Loss rate: 0.00%
```

Run 2: Report of PCC — Data Link

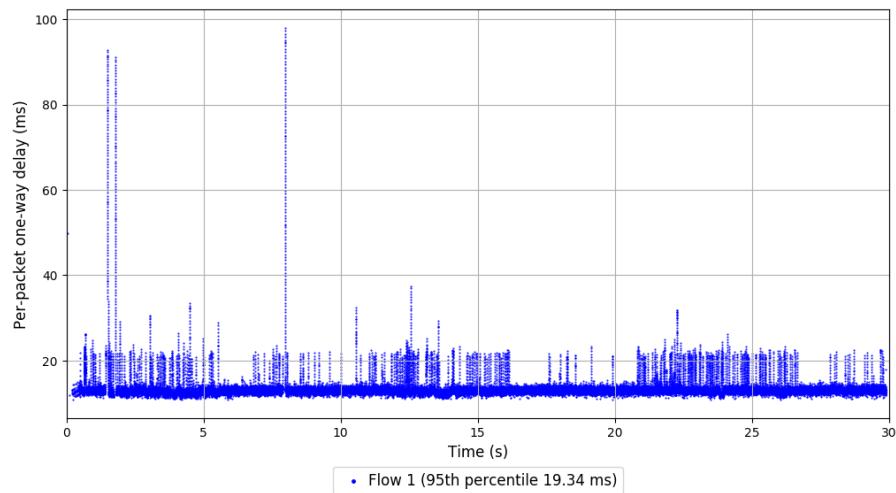
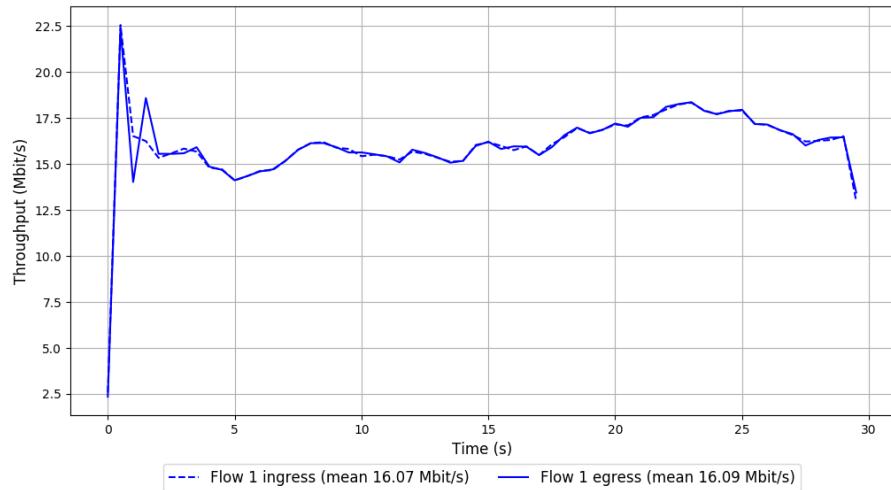


Run 3: Statistics of PCC

```
Start at: 2017-08-21 06:00:42
End at: 2017-08-21 06:01:12
Local clock offset: 0.558 ms
Remote clock offset: -1.196 ms

# Below is generated by plot.py at 2017-08-21 06:16:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.09 Mbit/s
95th percentile per-packet one-way delay: 19.340 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 16.09 Mbit/s
95th percentile per-packet one-way delay: 19.340 ms
Loss rate: 0.00%
```

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

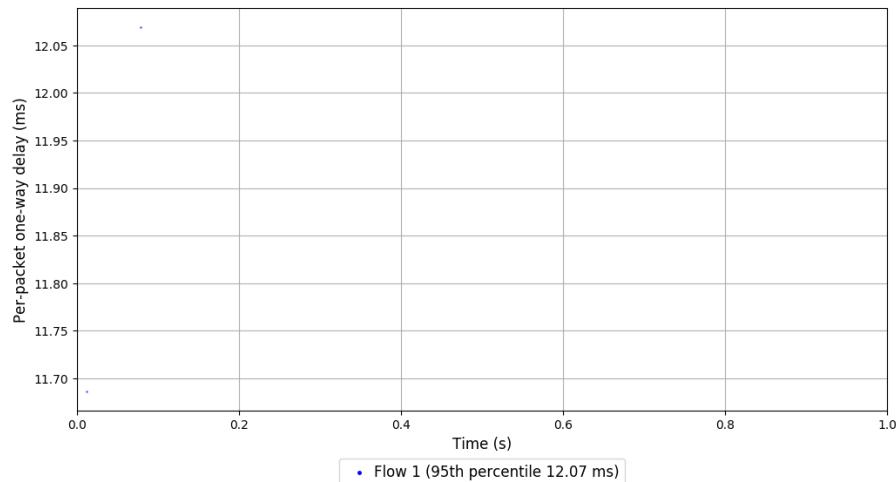
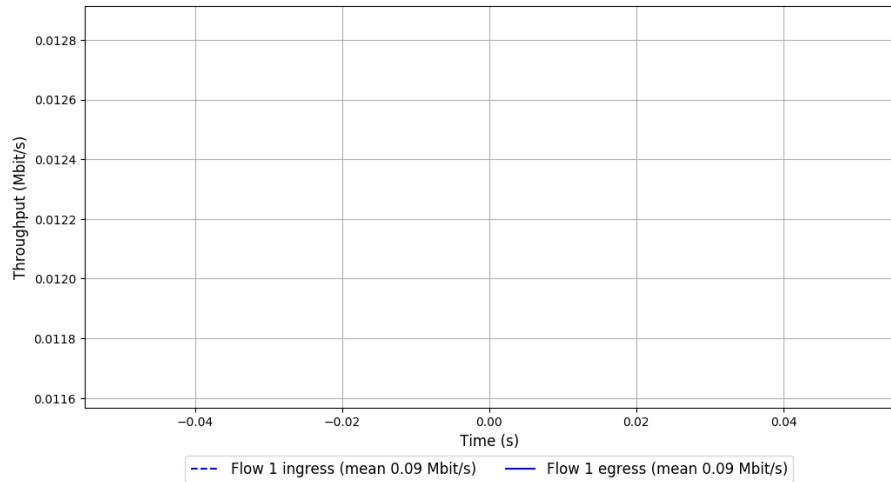
Start at: 2017-08-21 05:31:02

End at: 2017-08-21 05:31:32

Local clock offset: 0.293 ms

Remote clock offset: -1.242 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

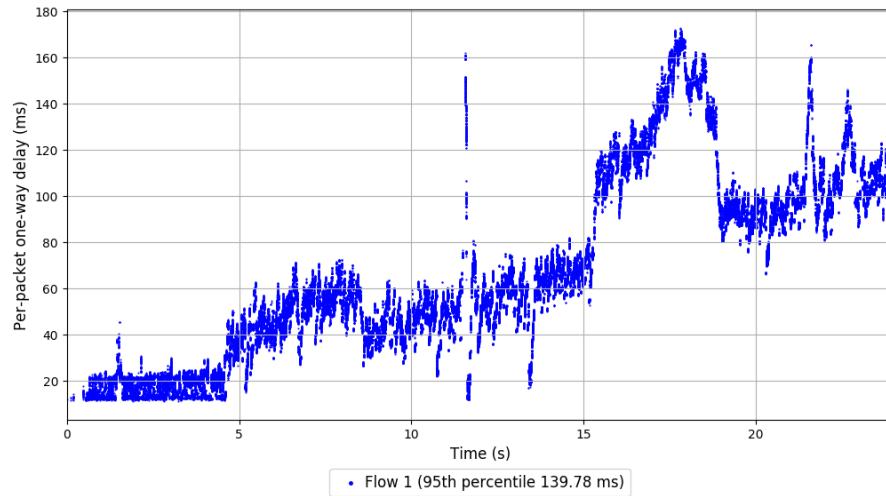
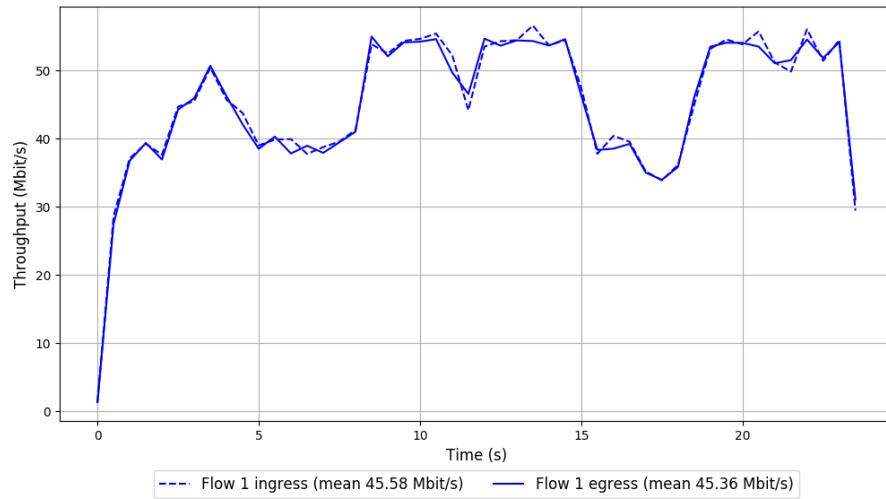
Start at: 2017-08-21 05:48:48

End at: 2017-08-21 05:49:18

Local clock offset: 0.523 ms

Remote clock offset: -1.081 ms

Run 2: Report of QUIC Cubic — Data Link

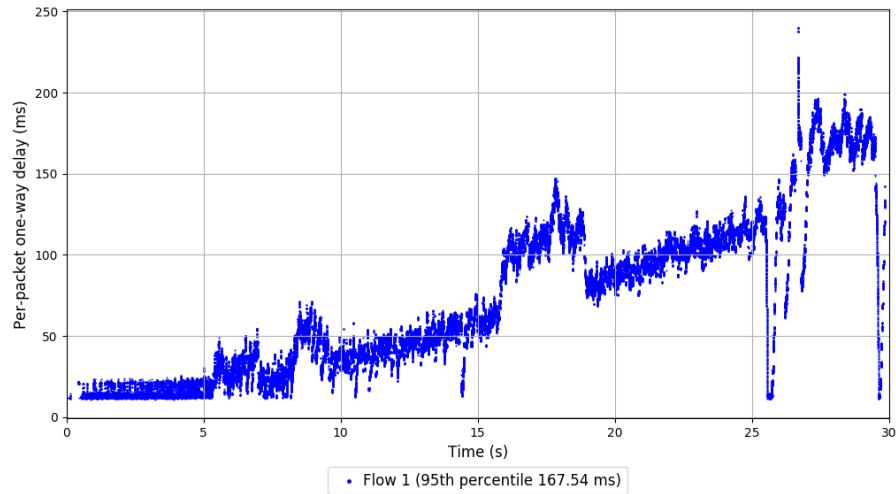
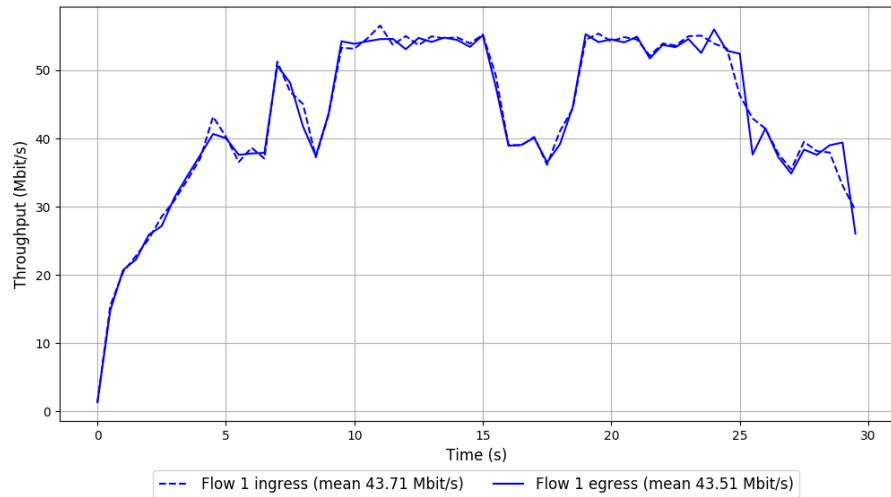


```
Run 3: Statistics of QUIC Cubic
```

```
Start at: 2017-08-21 06:06:40
End at: 2017-08-21 06:07:10
Local clock offset: 0.572 ms
Remote clock offset: -1.149 ms

# Below is generated by plot.py at 2017-08-21 06:17:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.51 Mbit/s
95th percentile per-packet one-way delay: 167.536 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 43.51 Mbit/s
95th percentile per-packet one-way delay: 167.536 ms
Loss rate: 0.39%
```

Run 3: Report of QUIC Cubic — Data Link

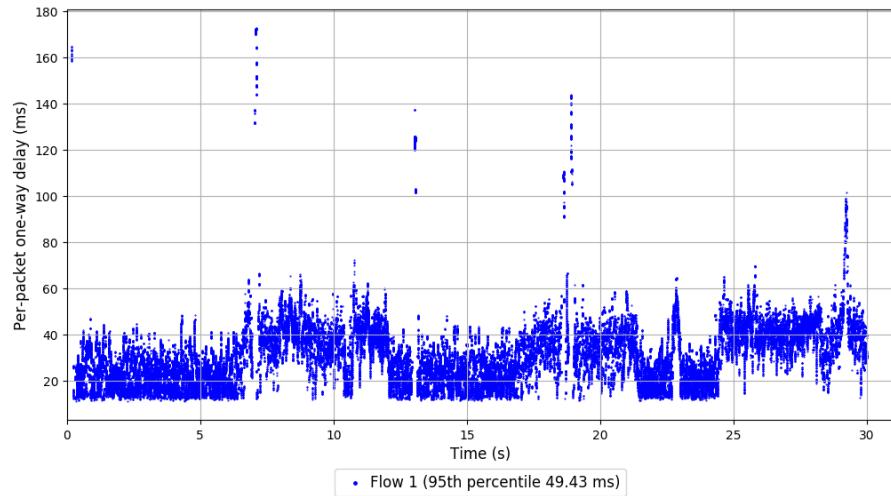
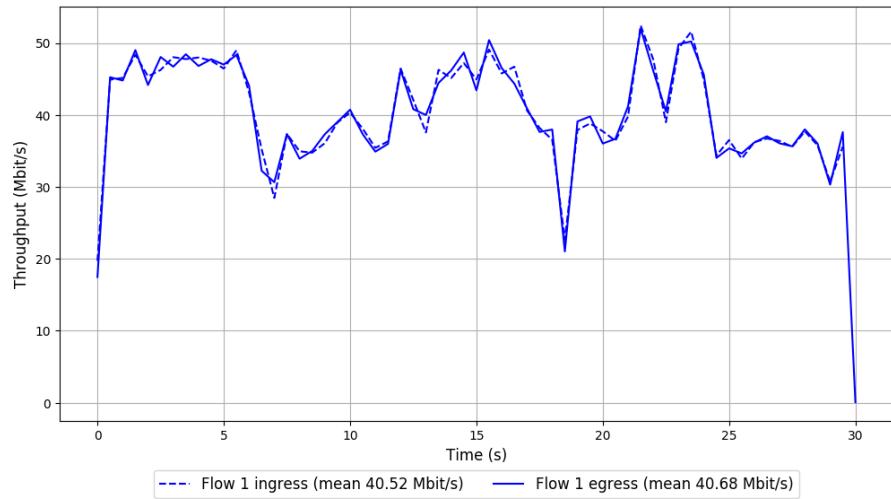


```
Run 1: Statistics of Saturator
```

```
Start at: 2017-08-21 05:27:25
End at: 2017-08-21 05:27:55
Local clock offset: 0.366 ms
Remote clock offset: -1.196 ms

# Below is generated by plot.py at 2017-08-21 06:17:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.68 Mbit/s
95th percentile per-packet one-way delay: 49.429 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 40.68 Mbit/s
95th percentile per-packet one-way delay: 49.429 ms
Loss rate: 0.04%
```

Run 1: Report of Saturator — Data Link



Run 2: Statistics of Saturator

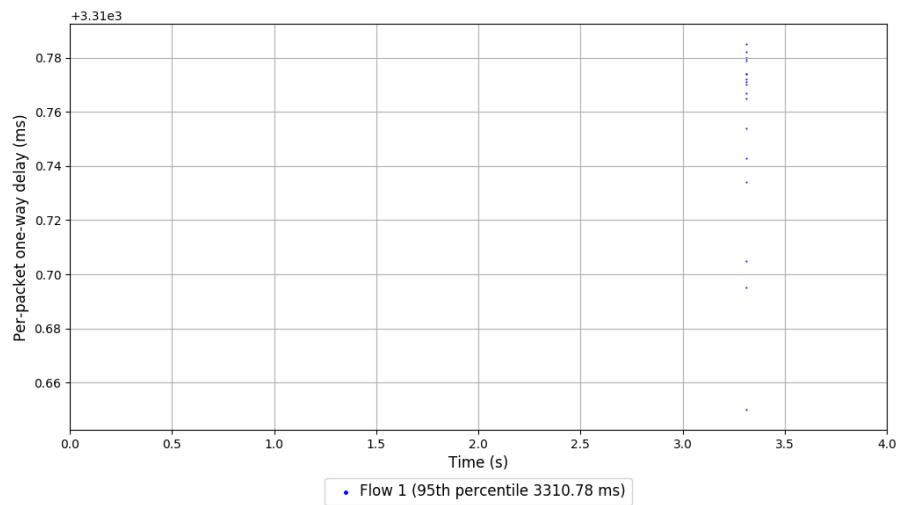
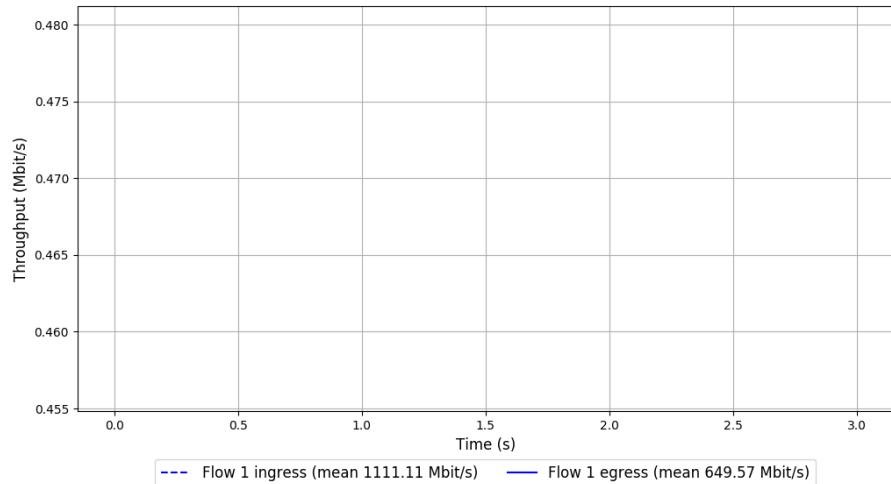
Start at: 2017-08-21 05:45:15

End at: 2017-08-21 05:45:45

Local clock offset: 0.418 ms

Remote clock offset: -1.068 ms

Run 2: Report of Saturator — Data Link

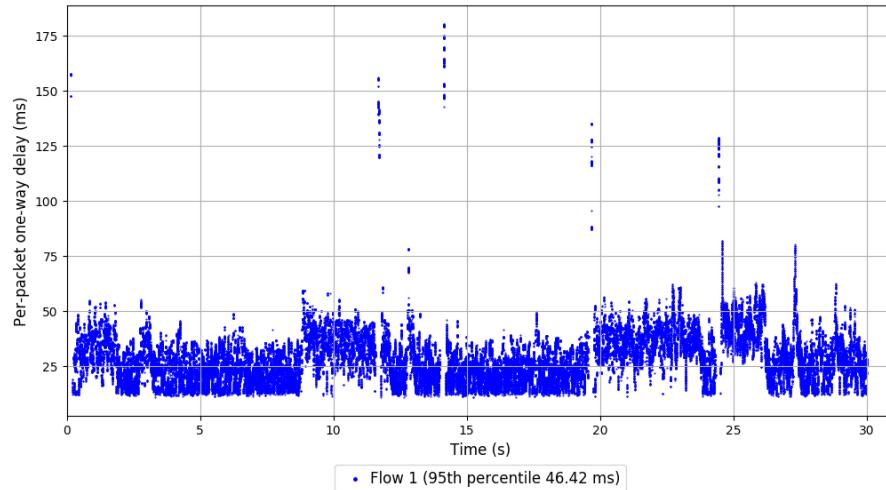
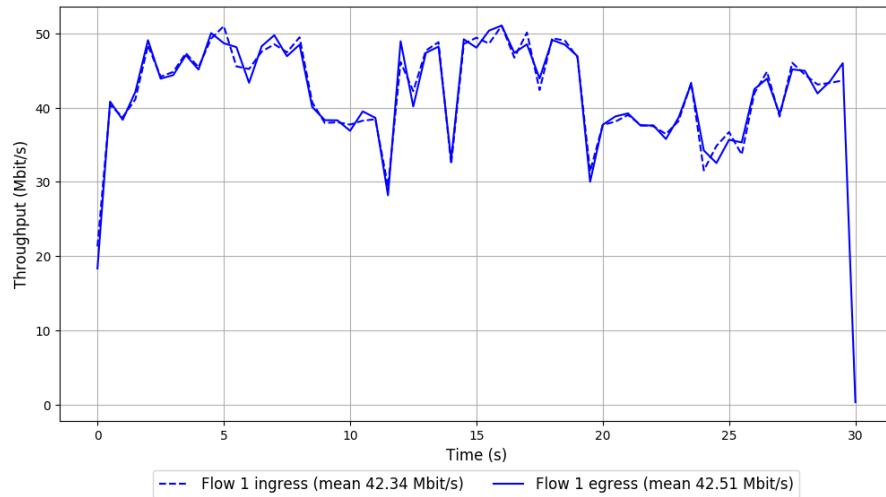


Run 3: Statistics of Saturator

```
Start at: 2017-08-21 06:03:03
End at: 2017-08-21 06:03:33
Local clock offset: 0.637 ms
Remote clock offset: -1.202 ms

# Below is generated by plot.py at 2017-08-21 06:17:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.51 Mbit/s
95th percentile per-packet one-way delay: 46.421 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 42.51 Mbit/s
95th percentile per-packet one-way delay: 46.421 ms
Loss rate: 0.02%
```

Run 3: Report of Saturator — Data Link

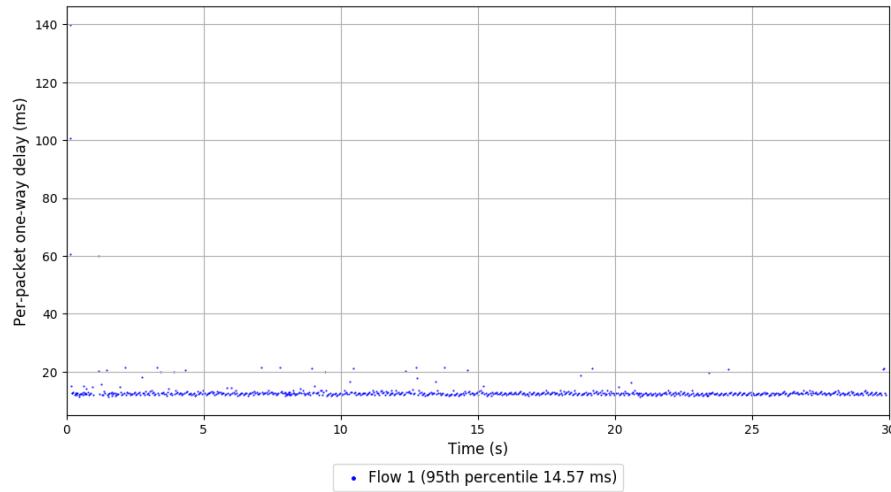
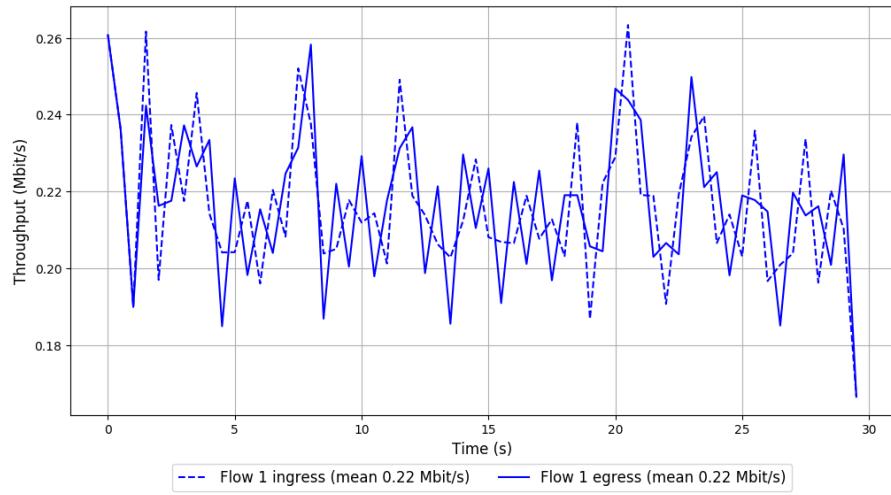


```
Run 1: Statistics of SCReAM
```

```
Start at: 2017-08-21 05:20:21
End at: 2017-08-21 05:20:51
Local clock offset: 0.227 ms
Remote clock offset: -1.29 ms

# Below is generated by plot.py at 2017-08-21 06:17:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 14.574 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 14.574 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

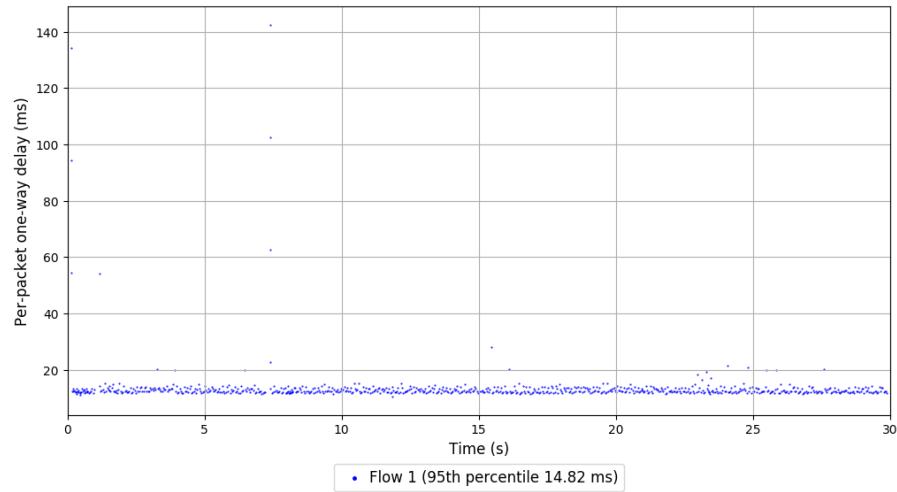
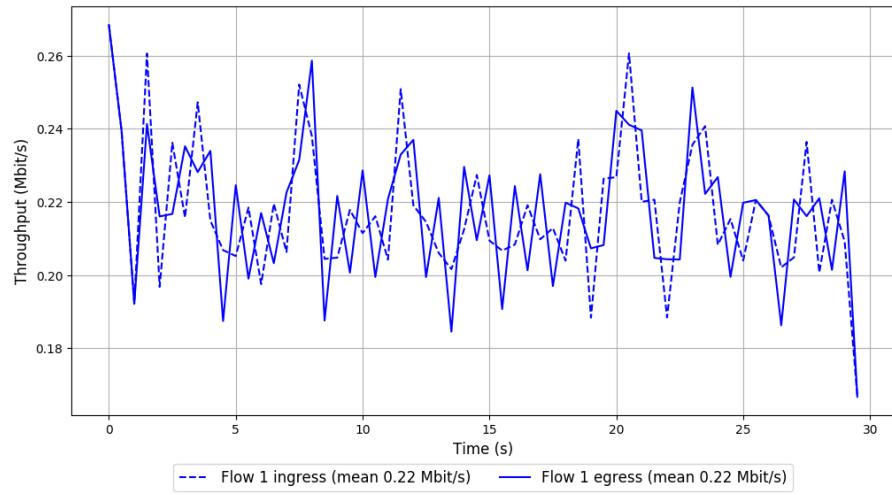


Run 2: Statistics of SCReAM

```
Start at: 2017-08-21 05:38:09
End at: 2017-08-21 05:38:39
Local clock offset: 0.465 ms
Remote clock offset: -1.062 ms

# Below is generated by plot.py at 2017-08-21 06:17:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 14.823 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 14.823 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

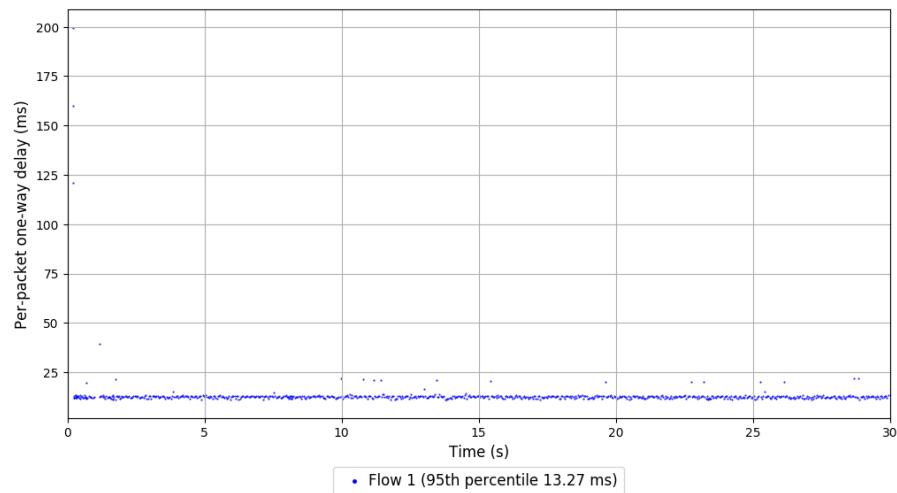
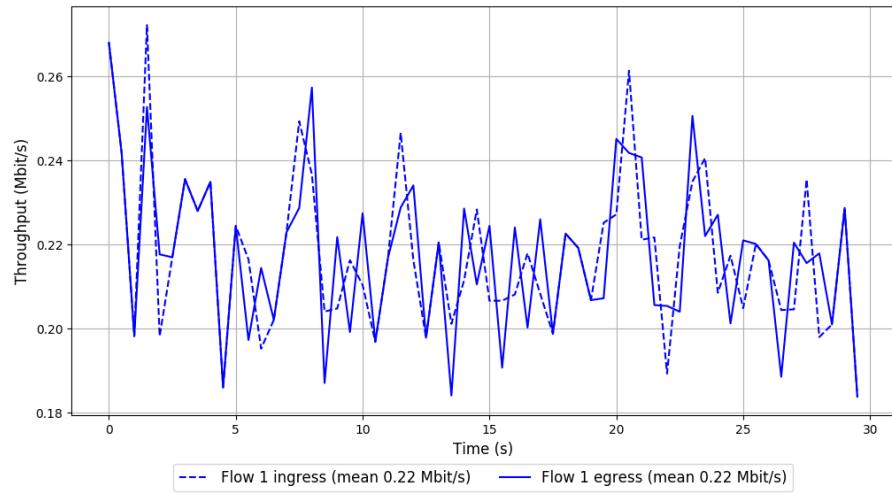


Run 3: Statistics of SCReAM

```
Start at: 2017-08-21 05:55:58
End at: 2017-08-21 05:56:28
Local clock offset: 0.583 ms
Remote clock offset: -1.215 ms

# Below is generated by plot.py at 2017-08-21 06:17:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.267 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.267 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

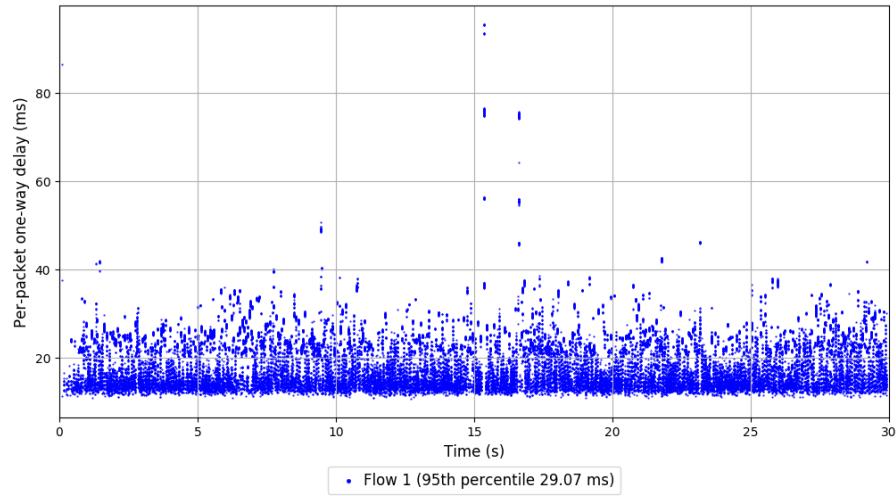
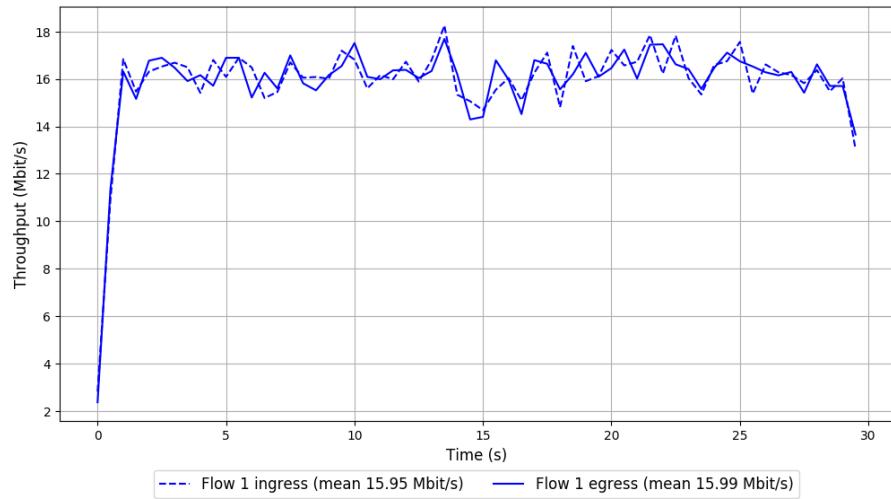


Run 1: Statistics of Sprout

```
Start at: 2017-08-21 05:35:47
End at: 2017-08-21 05:36:17
Local clock offset: 0.45 ms
Remote clock offset: -1.126 ms

# Below is generated by plot.py at 2017-08-21 06:17:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.99 Mbit/s
95th percentile per-packet one-way delay: 29.065 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.99 Mbit/s
95th percentile per-packet one-way delay: 29.065 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

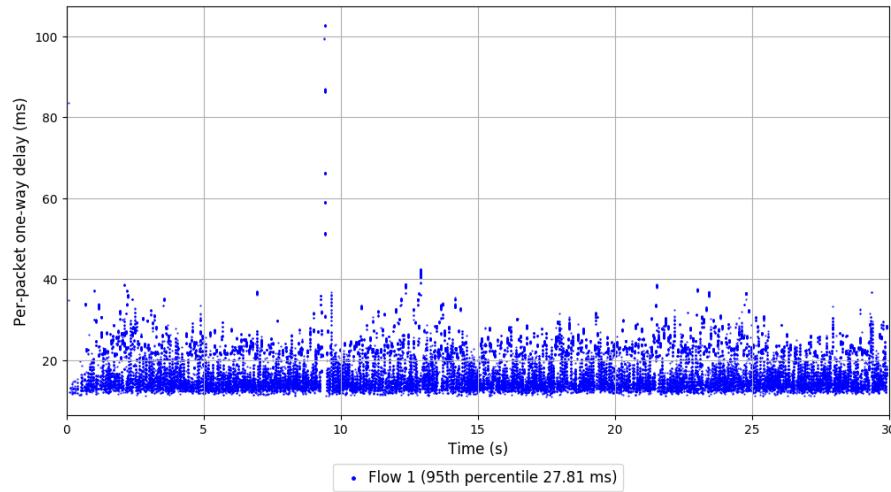
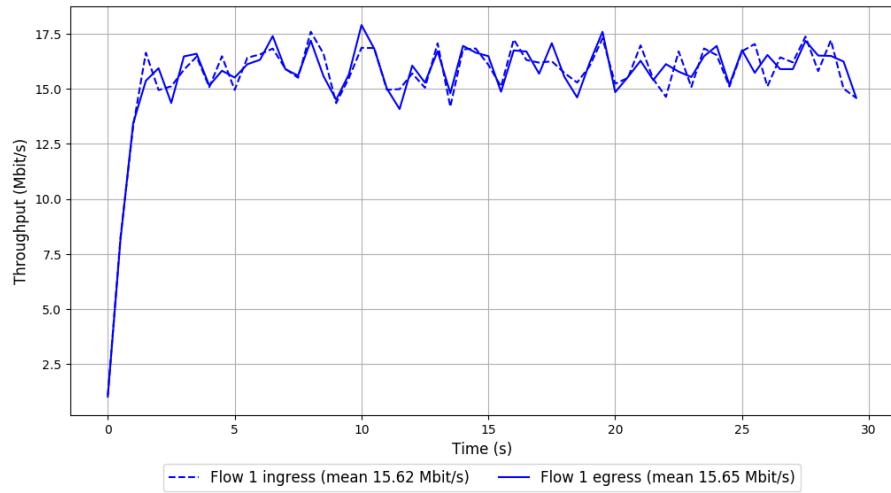


Run 2: Statistics of Sprout

```
Start at: 2017-08-21 05:53:36
End at: 2017-08-21 05:54:06
Local clock offset: 0.547 ms
Remote clock offset: -1.144 ms

# Below is generated by plot.py at 2017-08-21 06:17:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.65 Mbit/s
95th percentile per-packet one-way delay: 27.807 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.65 Mbit/s
95th percentile per-packet one-way delay: 27.807 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

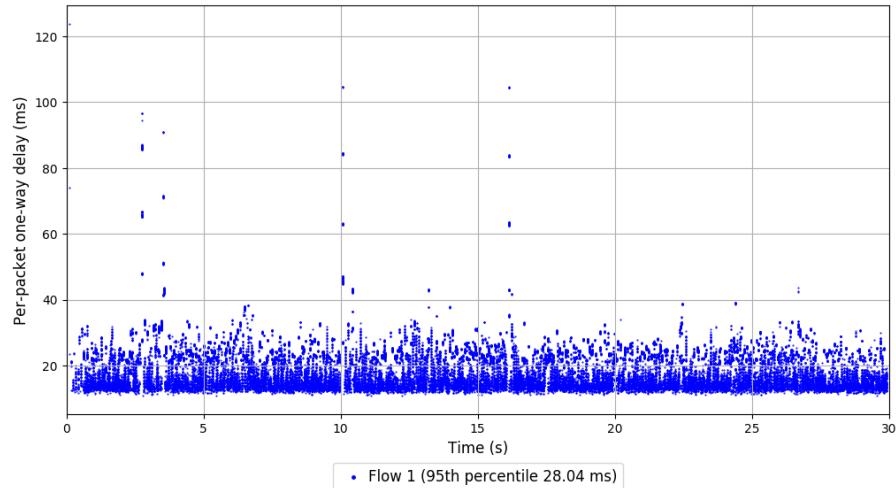
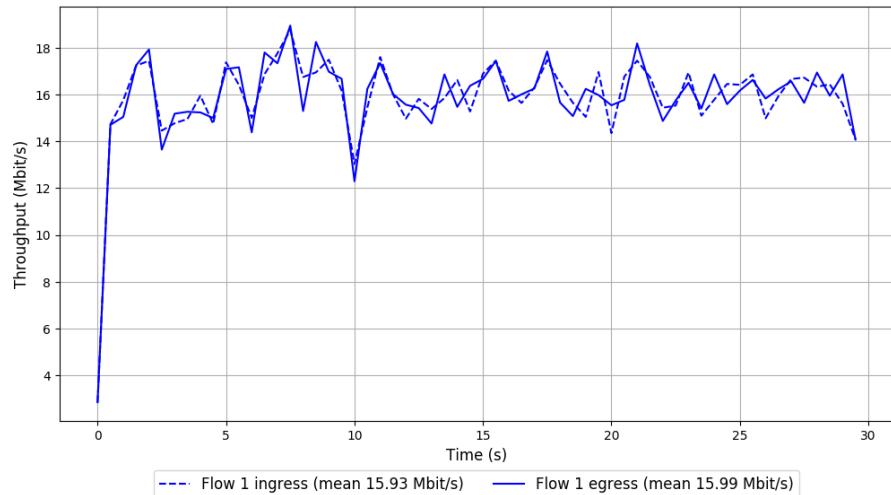


Run 3: Statistics of Sprout

```
Start at: 2017-08-21 06:11:29
End at: 2017-08-21 06:11:59
Local clock offset: 0.677 ms
Remote clock offset: -1.074 ms

# Below is generated by plot.py at 2017-08-21 06:17:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.99 Mbit/s
95th percentile per-packet one-way delay: 28.037 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.99 Mbit/s
95th percentile per-packet one-way delay: 28.037 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

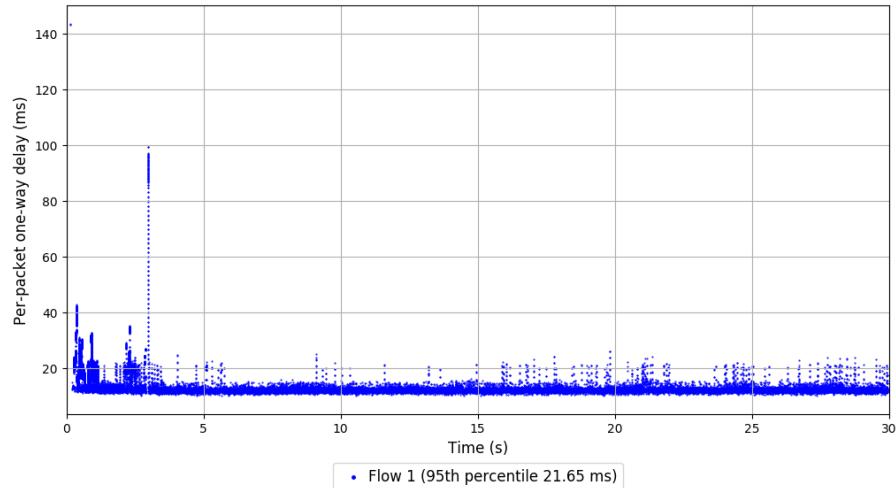
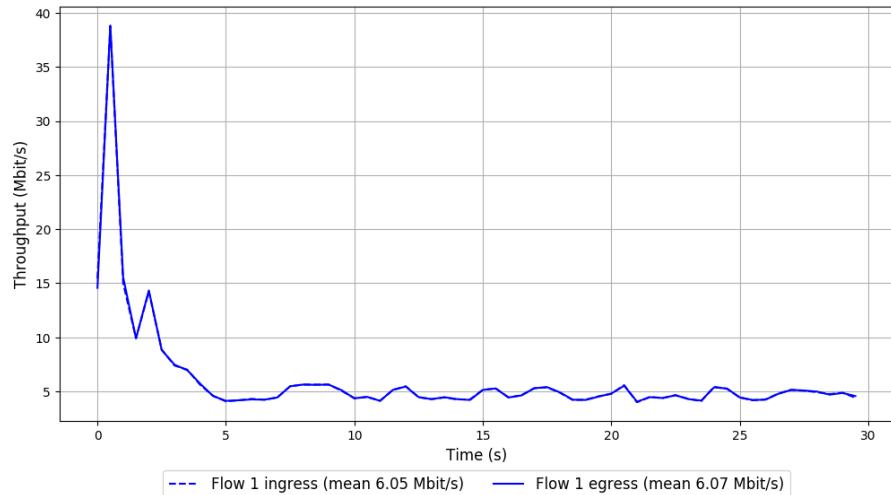


Run 1: Statistics of TaoVA-100x

```
Start at: 2017-08-21 05:21:31
End at: 2017-08-21 05:22:01
Local clock offset: 0.32 ms
Remote clock offset: -1.304 ms

# Below is generated by plot.py at 2017-08-21 06:17:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 21.651 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 21.651 ms
Loss rate: 0.00%
```

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

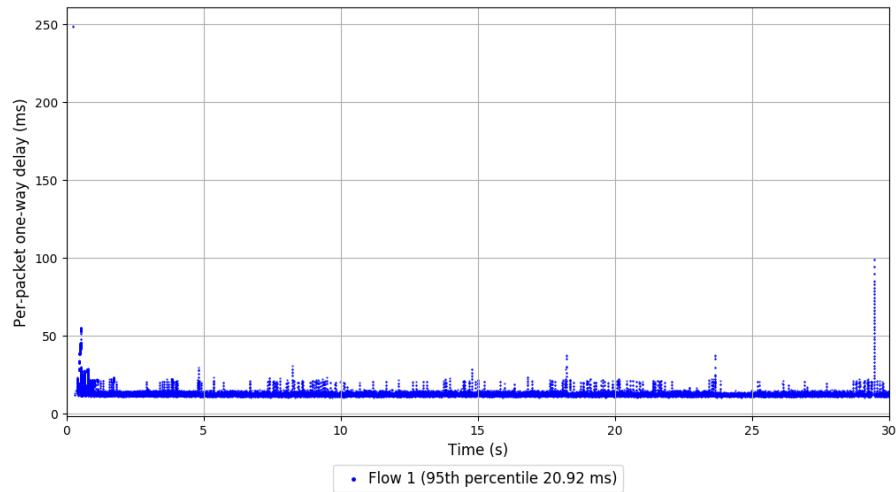
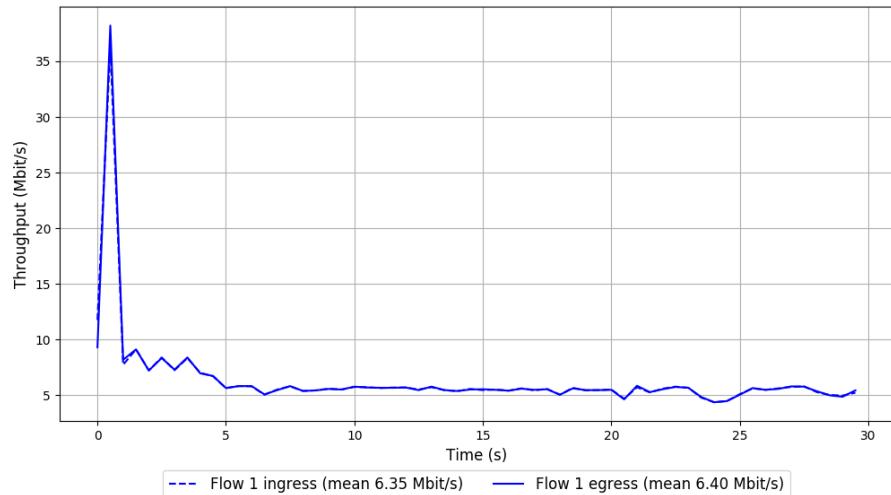


Run 2: Statistics of TaoVA-100x

```
Start at: 2017-08-21 05:39:19
End at: 2017-08-21 05:39:49
Local clock offset: 0.443 ms
Remote clock offset: -1.165 ms

# Below is generated by plot.py at 2017-08-21 06:17:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 20.924 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 20.924 ms
Loss rate: 0.00%
```

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

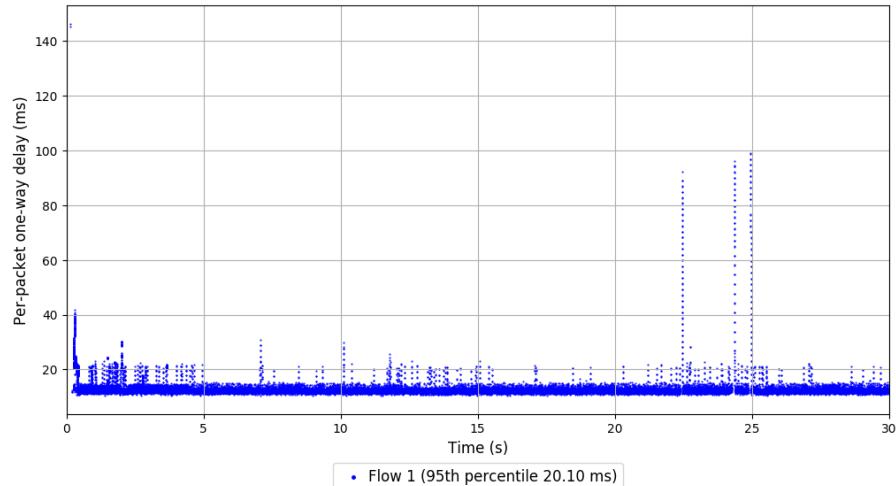
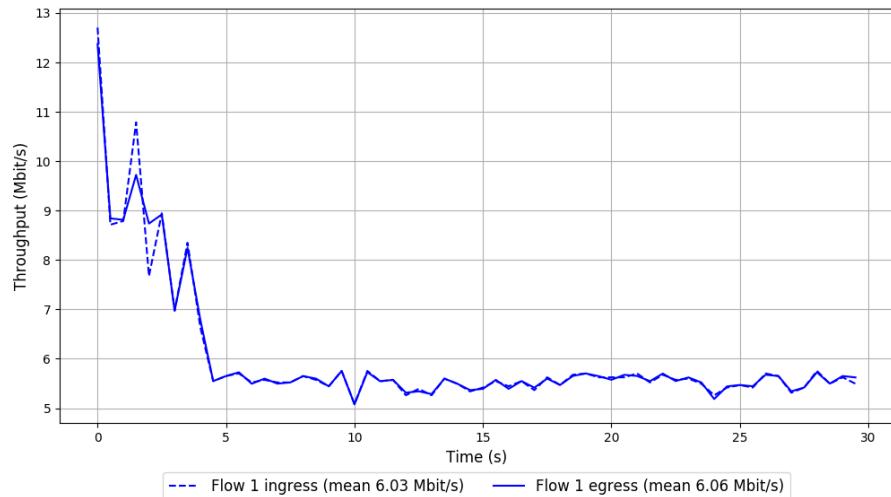


Run 3: Statistics of TaoVA-100x

```
Start at: 2017-08-21 05:57:08
End at: 2017-08-21 05:57:38
Local clock offset: 0.592 ms
Remote clock offset: -1.2 ms

# Below is generated by plot.py at 2017-08-21 06:17:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.06 Mbit/s
95th percentile per-packet one-way delay: 20.100 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.06 Mbit/s
95th percentile per-packet one-way delay: 20.100 ms
Loss rate: 0.00%
```

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

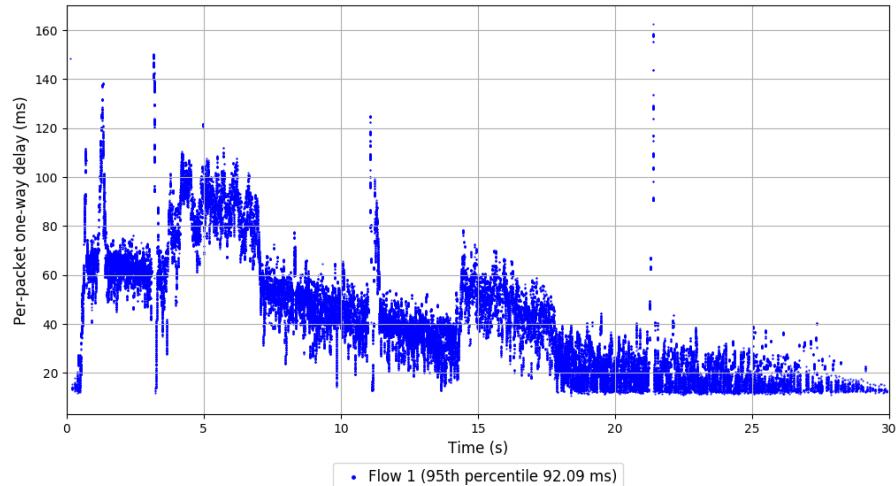
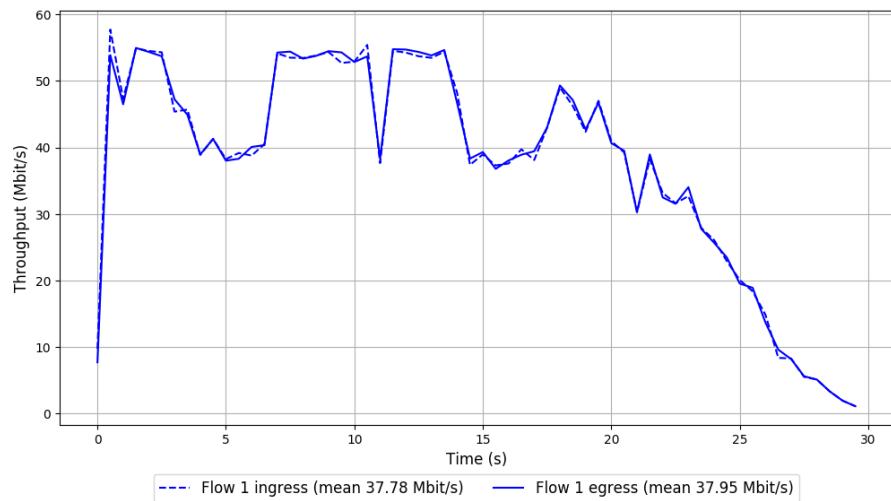


Run 1: Statistics of TCP Vegas

```
Start at: 2017-08-21 05:26:13
End at: 2017-08-21 05:26:43
Local clock offset: 0.259 ms
Remote clock offset: -1.25 ms

# Below is generated by plot.py at 2017-08-21 06:17:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.95 Mbit/s
95th percentile per-packet one-way delay: 92.088 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 37.95 Mbit/s
95th percentile per-packet one-way delay: 92.088 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

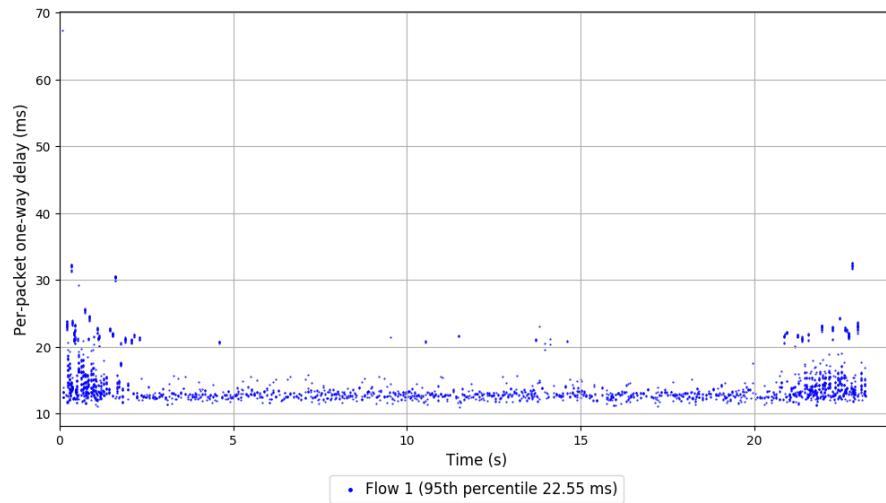
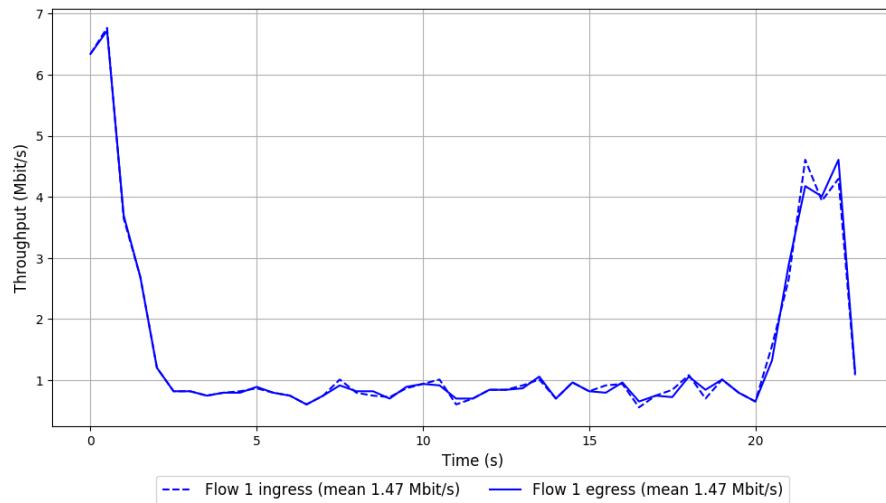
Start at: 2017-08-21 05:44:04

End at: 2017-08-21 05:44:34

Local clock offset: 0.382 ms

Remote clock offset: -1.164 ms

Run 2: Report of TCP Vegas — Data Link

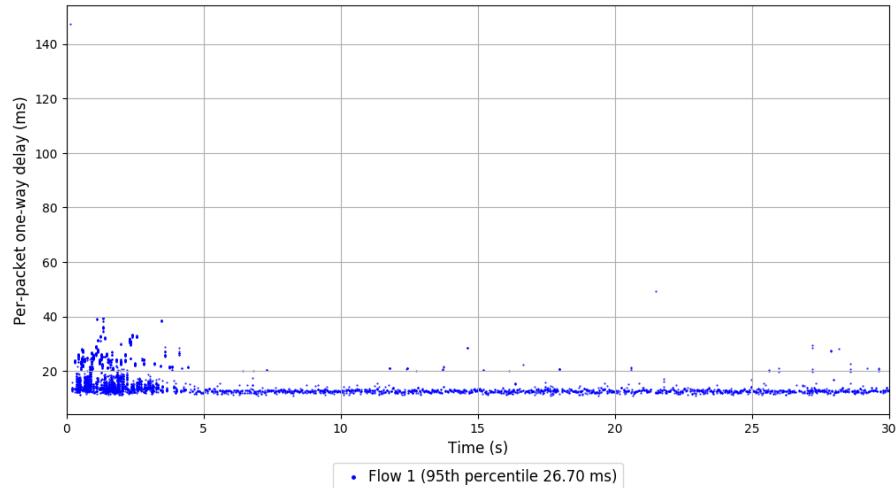
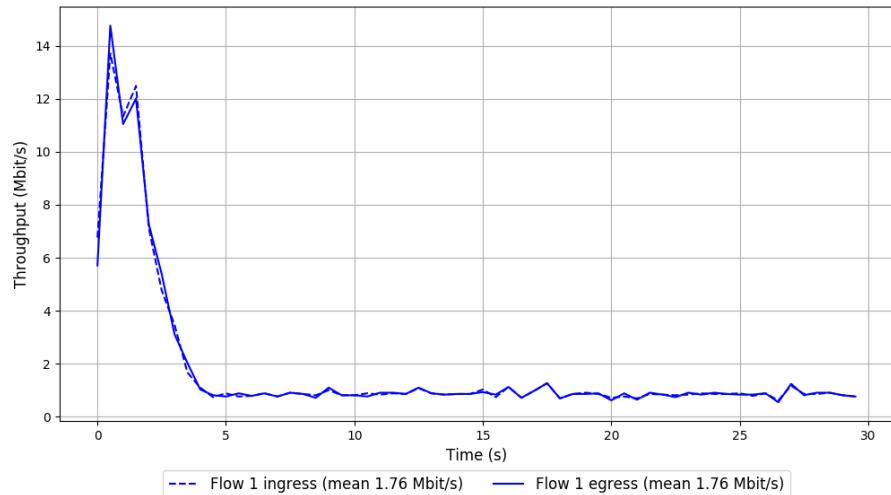


Run 3: Statistics of TCP Vegas

```
Start at: 2017-08-21 06:01:53
End at: 2017-08-21 06:02:23
Local clock offset: 0.658 ms
Remote clock offset: -1.203 ms

# Below is generated by plot.py at 2017-08-21 06:17:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 26.705 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 26.705 ms
Loss rate: 0.00%
```

Run 3: Report of TCP Vegas — Data Link

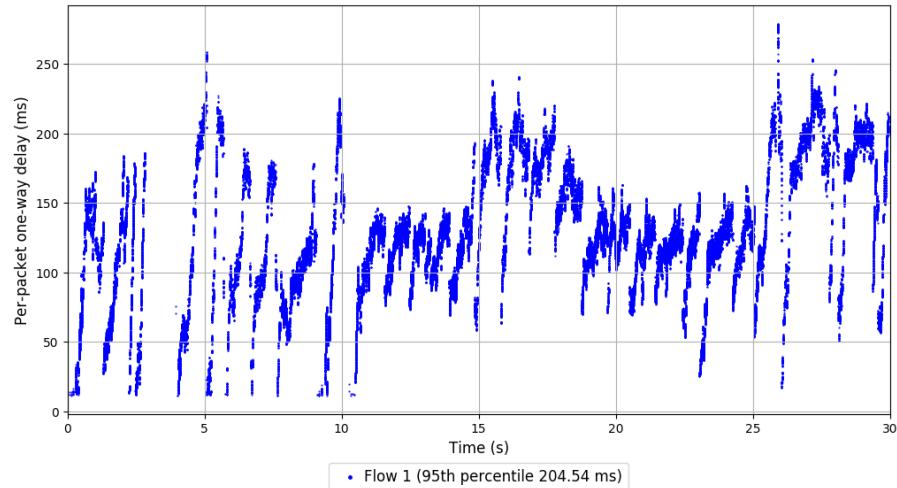
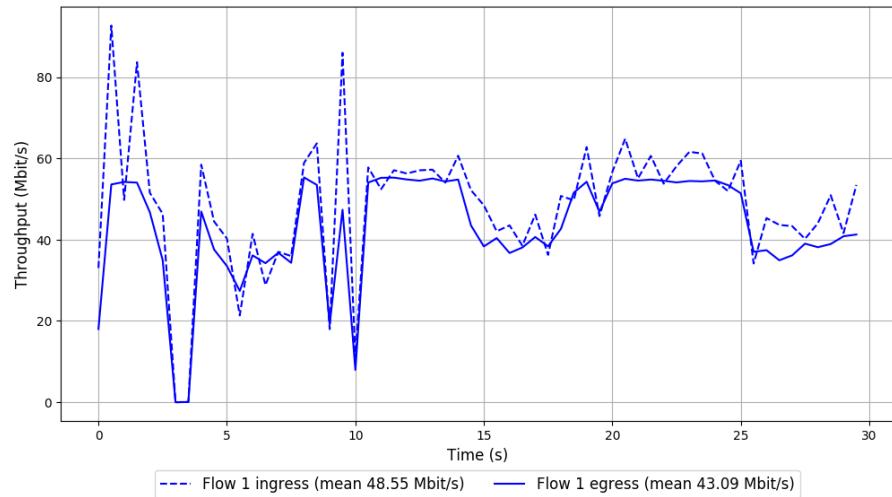


Run 1: Statistics of Verus

```
Start at: 2017-08-21 05:34:34
End at: 2017-08-21 05:35:04
Local clock offset: 0.426 ms
Remote clock offset: -1.093 ms

# Below is generated by plot.py at 2017-08-21 06:17:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.09 Mbit/s
95th percentile per-packet one-way delay: 204.541 ms
Loss rate: 11.21%
-- Flow 1:
Average throughput: 43.09 Mbit/s
95th percentile per-packet one-way delay: 204.541 ms
Loss rate: 11.21%
```

Run 1: Report of Verus — Data Link

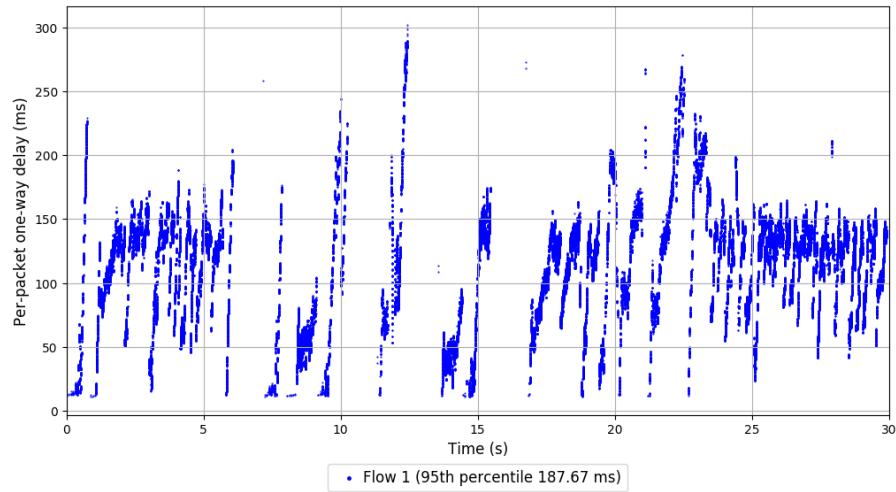
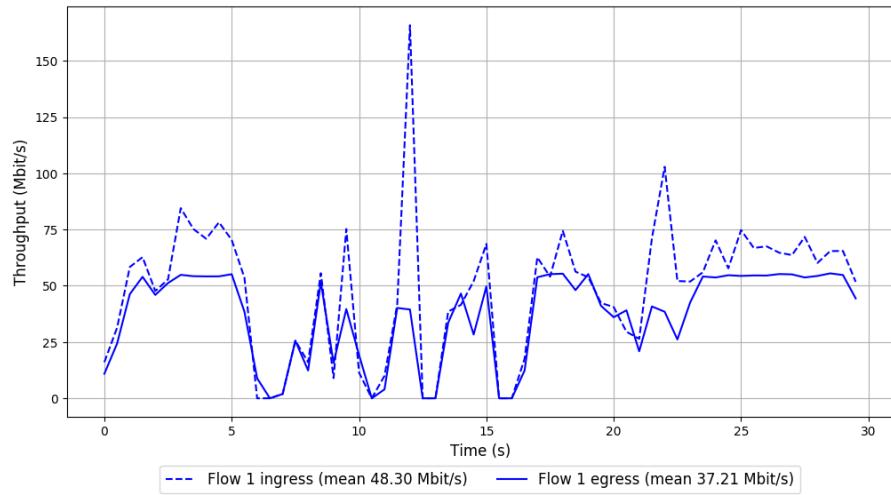


Run 2: Statistics of Verus

```
Start at: 2017-08-21 05:52:23
End at: 2017-08-21 05:52:53
Local clock offset: 0.534 ms
Remote clock offset: -1.142 ms

# Below is generated by plot.py at 2017-08-21 06:17:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.21 Mbit/s
95th percentile per-packet one-way delay: 187.666 ms
Loss rate: 22.93%
-- Flow 1:
Average throughput: 37.21 Mbit/s
95th percentile per-packet one-way delay: 187.666 ms
Loss rate: 22.93%
```

Run 2: Report of Verus — Data Link

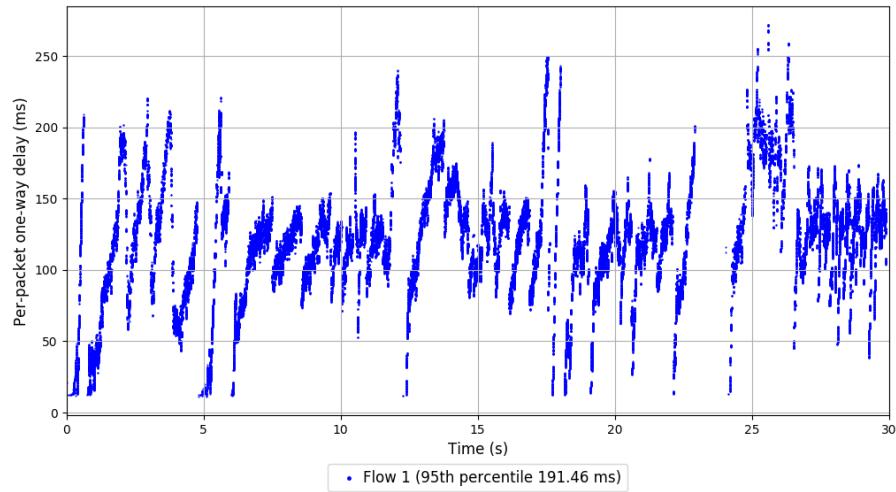
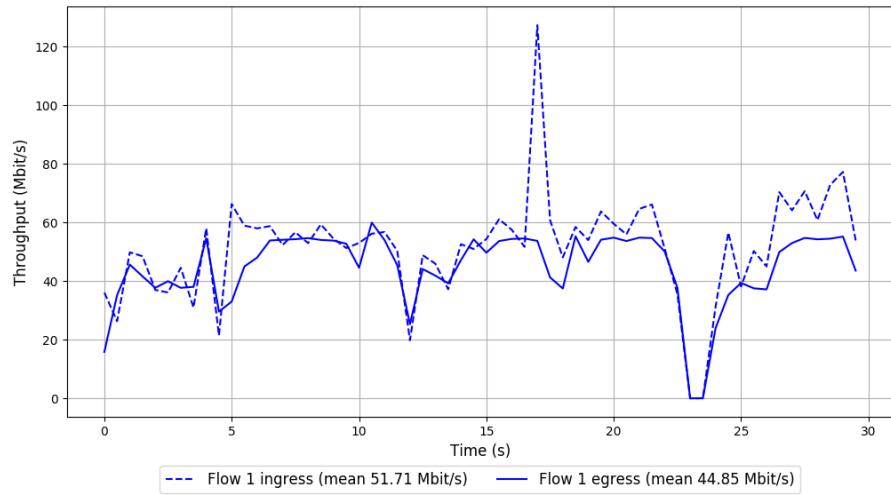


Run 3: Statistics of Verus

```
Start at: 2017-08-21 06:10:16
End at: 2017-08-21 06:10:46
Local clock offset: 0.583 ms
Remote clock offset: -1.073 ms

# Below is generated by plot.py at 2017-08-21 06:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.85 Mbit/s
95th percentile per-packet one-way delay: 191.456 ms
Loss rate: 13.28%
-- Flow 1:
Average throughput: 44.85 Mbit/s
95th percentile per-packet one-way delay: 191.456 ms
Loss rate: 13.28%
```

Run 3: Report of Verus — Data Link

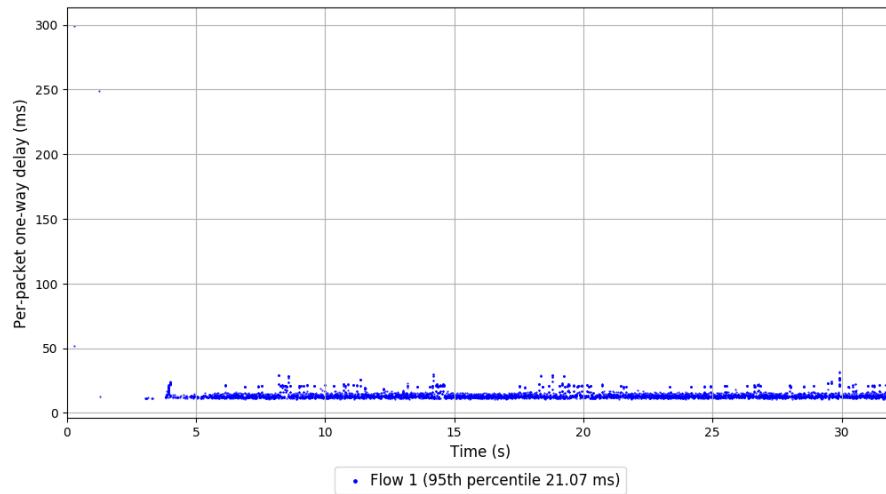
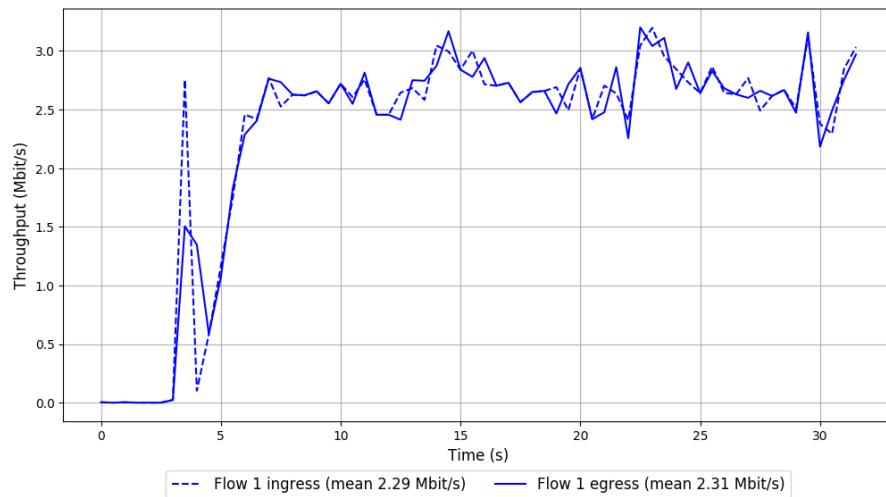


```
Run 1: Statistics of WebRTC media

Start at: 2017-08-21 05:23:52
End at: 2017-08-21 05:24:22
Local clock offset: 0.353 ms
Remote clock offset: -1.301 ms

# Below is generated by plot.py at 2017-08-21 06:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 21.070 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 21.070 ms
Loss rate: 0.11%
```

Run 1: Report of WebRTC media — Data Link

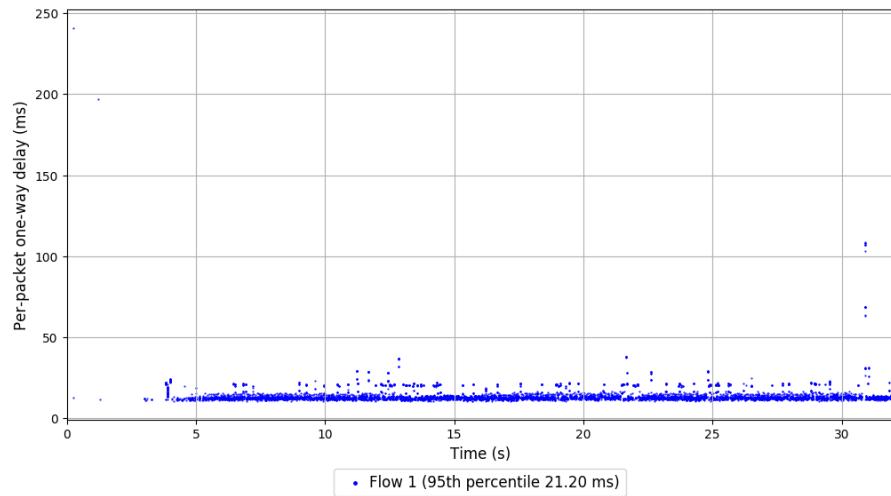
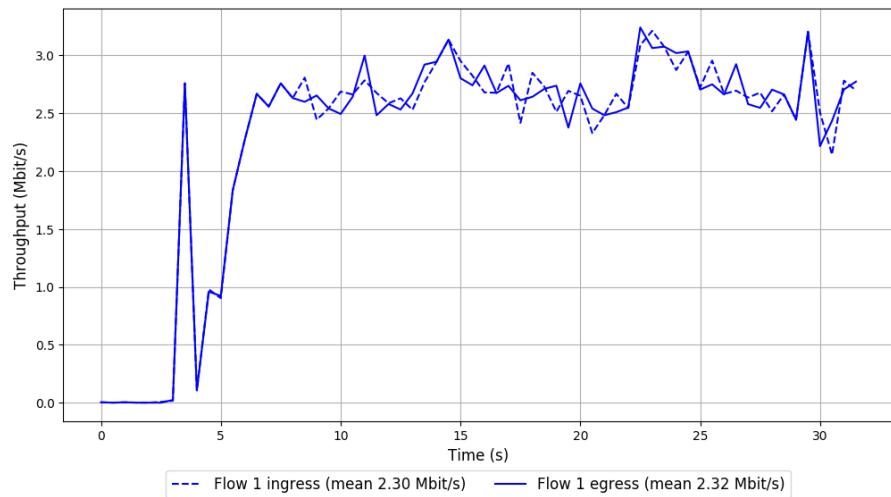


Run 2: Statistics of WebRTC media

```
Start at: 2017-08-21 05:41:43
End at: 2017-08-21 05:42:13
Local clock offset: 0.403 ms
Remote clock offset: -1.127 ms

# Below is generated by plot.py at 2017-08-21 06:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 21.205 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 21.205 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

```
Start at: 2017-08-21 05:59:32
End at: 2017-08-21 06:00:02
Local clock offset: 0.552 ms
Remote clock offset: -1.114 ms

# Below is generated by plot.py at 2017-08-21 06:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 21.173 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 21.173 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

