

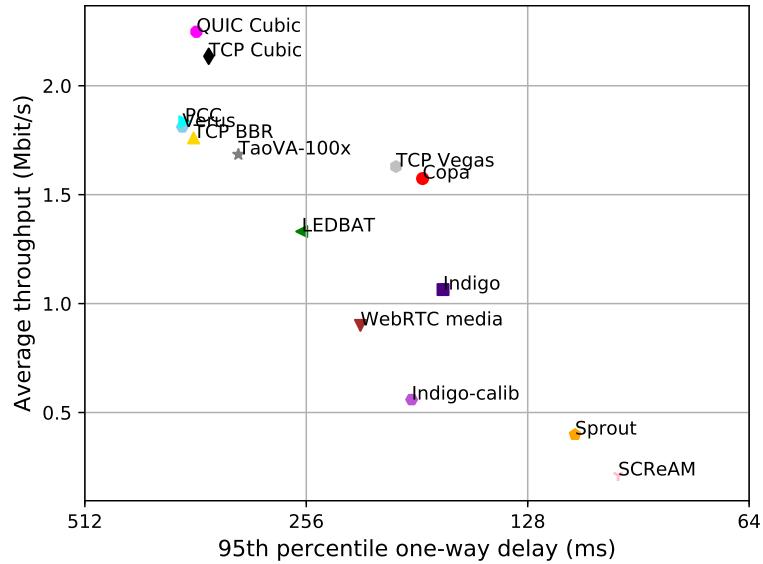
Pantheon Report

Generated at 2017-12-05 07:49:51 (UTC).
Data path: India ppp0 (*remote*) → AWS India 1 Ethernet (*local*).
Repeated the test of 14 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.

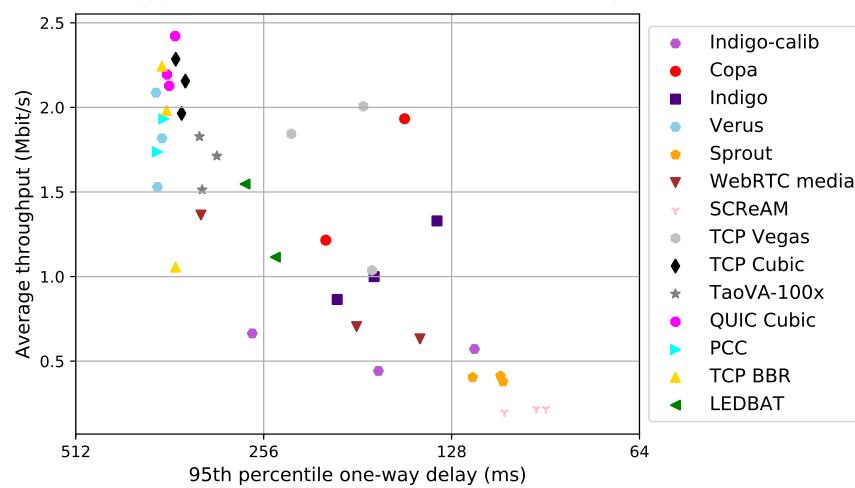
Git summary:

```
branch: indigos @ e3a57ad5ac5cfaca0e3f983c8dd4cc3509e0262
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/genericCC @ b5b7c38e8391001927dc41c6cfa2627d03dde737
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-cellular @ aee99e8eb842cb053f8c9a80e28cd256a930bbc2
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/indigo-no-cwnd @ 3e58442c04028a11d7b02456e137604633ba2d6c
third_party/indigo-no-delivery-rate @ 57caa40858b964906edff4876d5a7e5bfff666c5
third_party/indigo-no-queuing-delay @ 03455460fd1a8ffbdad86fabb936fdca204b80db
third_party/indigo-no-send-rate @ b39dfa6b2c5f19cb7cd89626cb4f5bb81f9fecda
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
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 @ f1a14bffe749737437f61b1eaeb30b267cde681
third_party/sprout @ 6f2efef6e088d91066a9f023df375eee2665089ce
  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 India ppp0 to AWS India 1 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



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



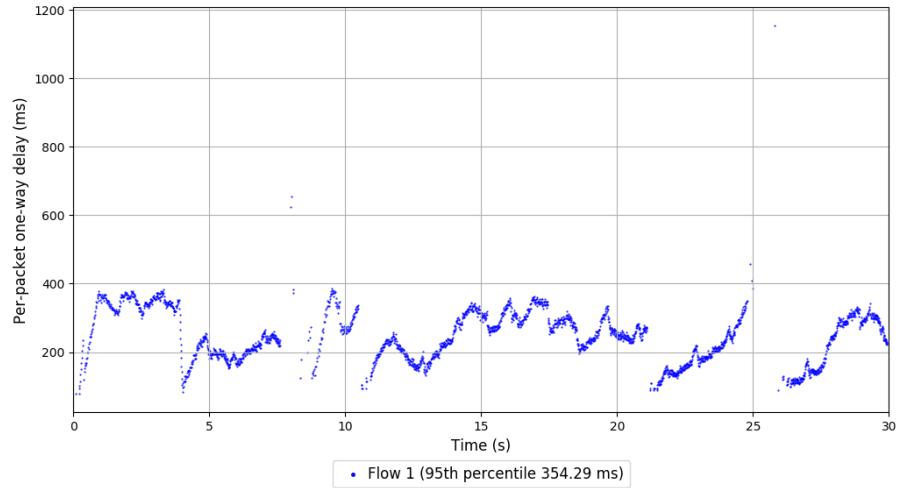
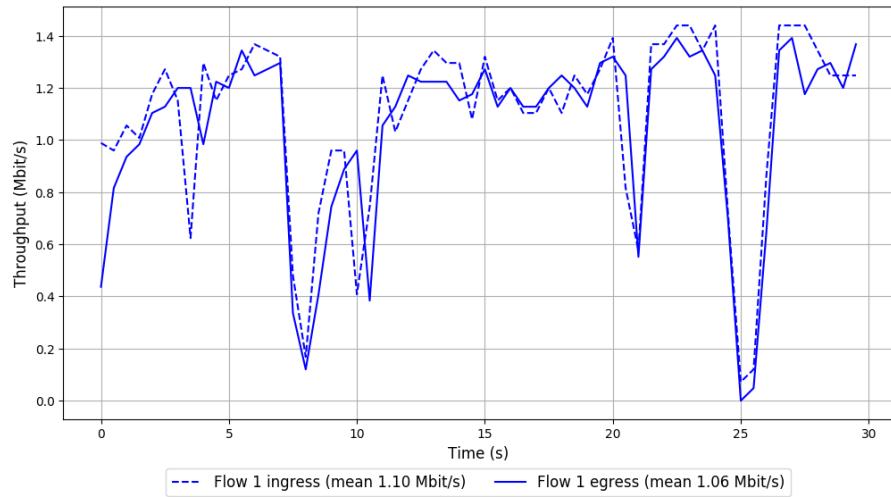
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	1.76	364.29	3.27
TCP Cubic	3	2.14	347.45	1.82
LEDBAT	2	1.33	259.70	0.76
PCC	2	1.83	374.43	28.80
QUIC Cubic	3	2.25	361.07	2.86
SCReAM	3	0.21	96.45	0.25
WebRTC media	3	0.90	216.09	0.55
Sprout	3	0.40	110.39	0.56
TaoVA-100x	3	1.68	316.63	3.03
TCP Vegas	3	1.63	193.34	0.50
Verus	3	1.81	377.36	24.88
Copa	2	1.57	177.89	0.77
Indigo	3	1.06	166.86	0.56
Indigo-calib	3	0.56	184.09	5.05

Run 1: Statistics of TCP BBR

```
Start at: 2017-12-05 06:21:19
End at: 2017-12-05 06:21:49
Local clock offset: 13.022 ms
Remote clock offset: -20.415 ms

# Below is generated by plot.py at 2017-12-05 07:49:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 354.288 ms
Loss rate: 3.99%
-- Flow 1:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 354.288 ms
Loss rate: 3.99%
```

Run 1: Report of TCP BBR — Data Link

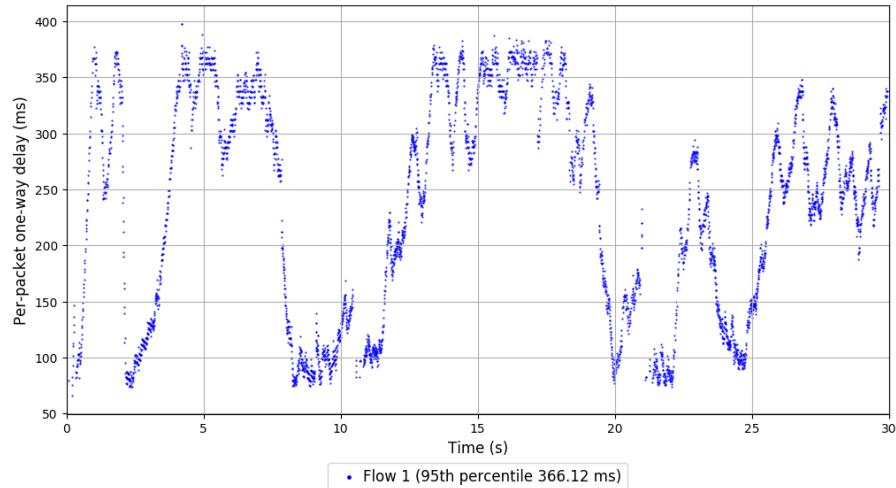
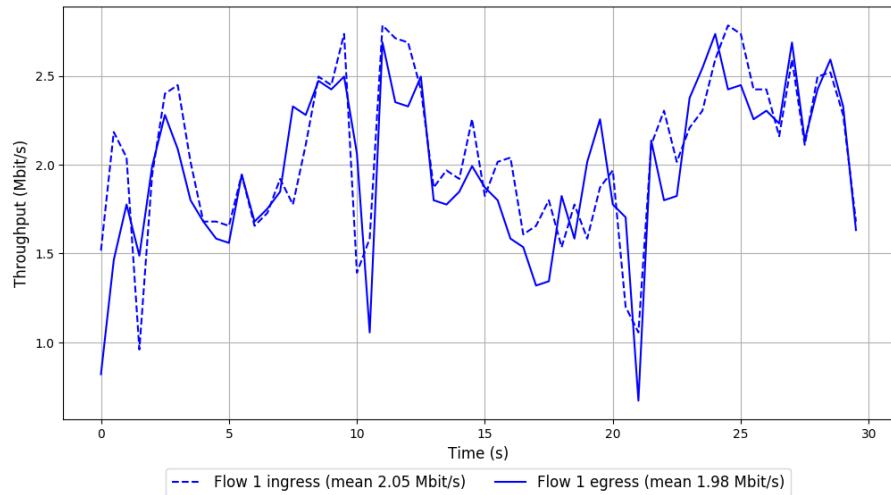


Run 2: Statistics of TCP BBR

```
Start at: 2017-12-05 06:36:39
End at: 2017-12-05 06:37:09
Local clock offset: 15.591 ms
Remote clock offset: -19.561 ms

# Below is generated by plot.py at 2017-12-05 07:49:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 366.124 ms
Loss rate: 3.50%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 366.124 ms
Loss rate: 3.50%
```

Run 2: Report of TCP BBR — Data Link

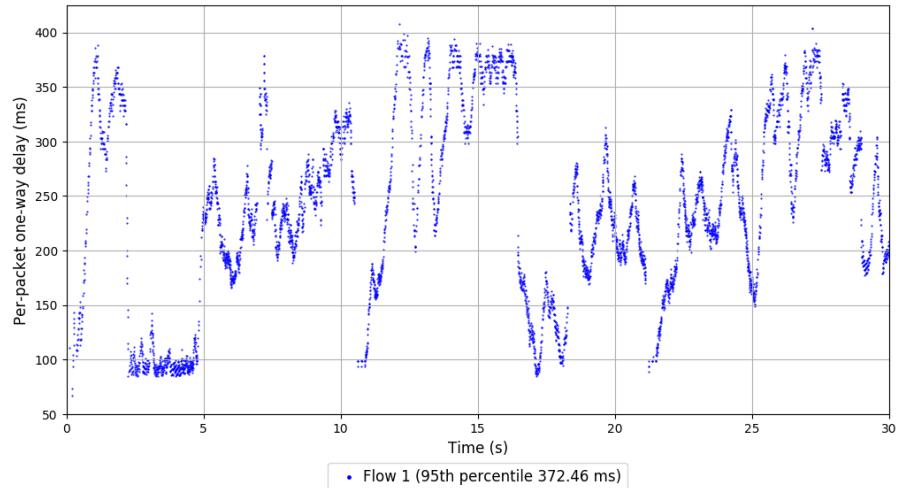
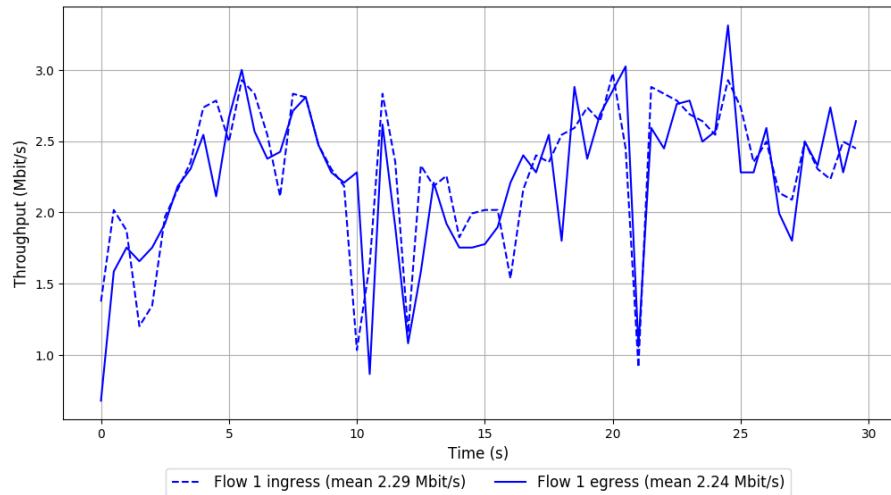


Run 3: Statistics of TCP BBR

```
Start at: 2017-12-05 06:51:54
End at: 2017-12-05 06:52:24
Local clock offset: 9.811 ms
Remote clock offset: -19.025 ms

# Below is generated by plot.py at 2017-12-05 07:49:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 372.465 ms
Loss rate: 2.32%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 372.465 ms
Loss rate: 2.32%
```

Run 3: Report of TCP BBR — Data Link

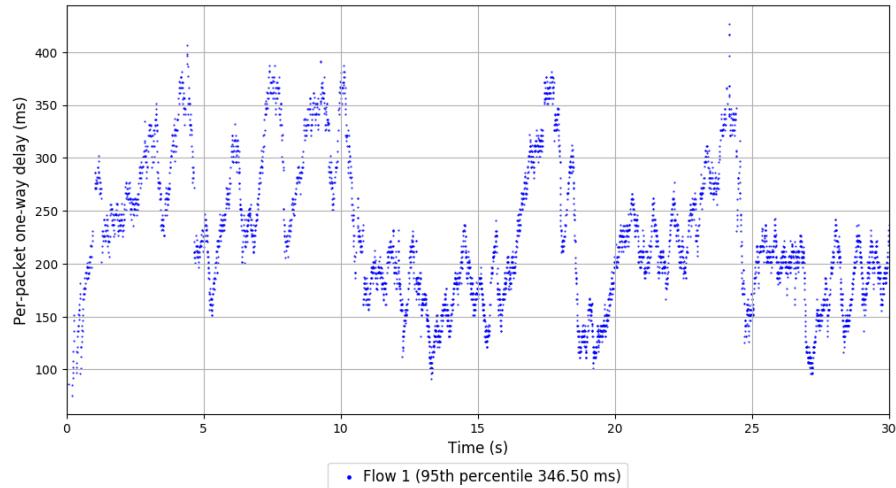
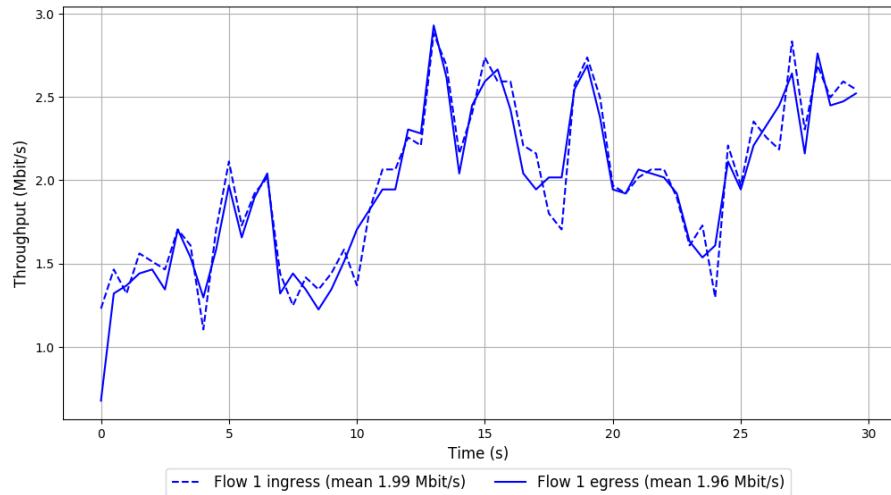


Run 1: Statistics of TCP Cubic

```
Start at: 2017-12-05 06:30:04
End at: 2017-12-05 06:30:34
Local clock offset: 14.389 ms
Remote clock offset: -20.035 ms

# Below is generated by plot.py at 2017-12-05 07:49:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 346.503 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 346.503 ms
Loss rate: 1.57%
```

Run 1: Report of TCP Cubic — Data Link

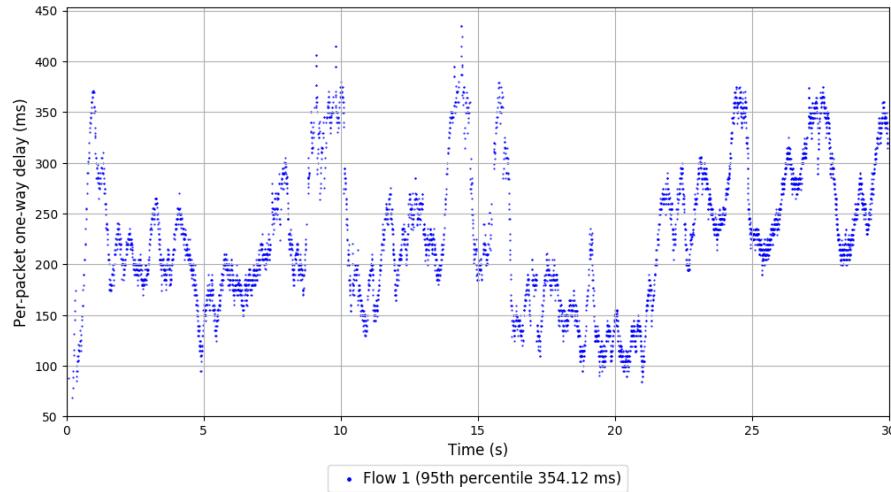
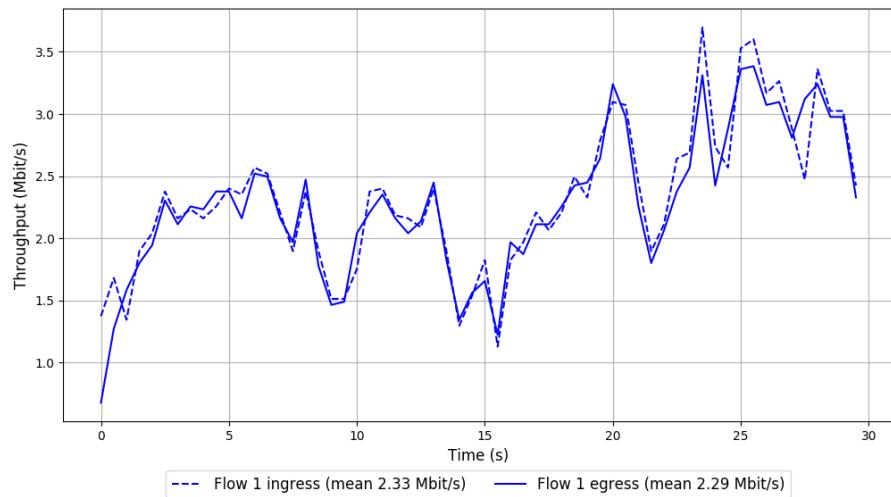


Run 2: Statistics of TCP Cubic

```
Start at: 2017-12-05 06:45:22
End at: 2017-12-05 06:45:53
Local clock offset: 12.906 ms
Remote clock offset: -19.631 ms

# Below is generated by plot.py at 2017-12-05 07:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 354.115 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 354.115 ms
Loss rate: 2.05%
```

Run 2: Report of TCP Cubic — Data Link

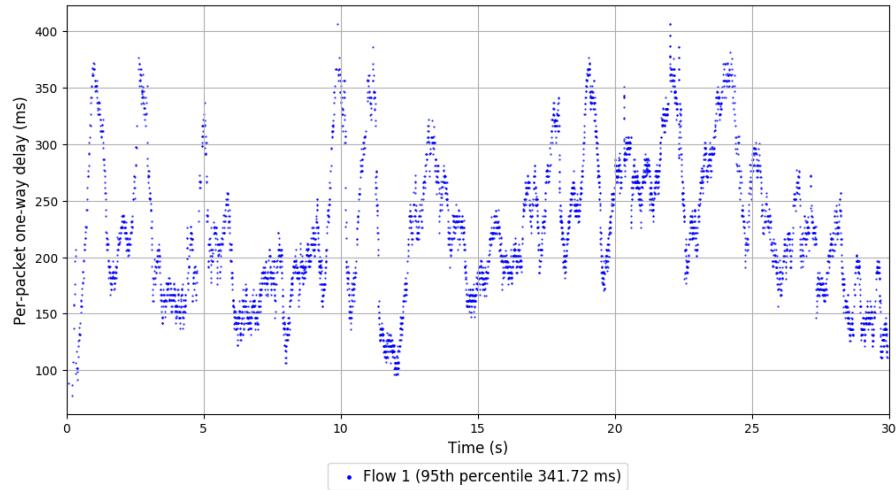
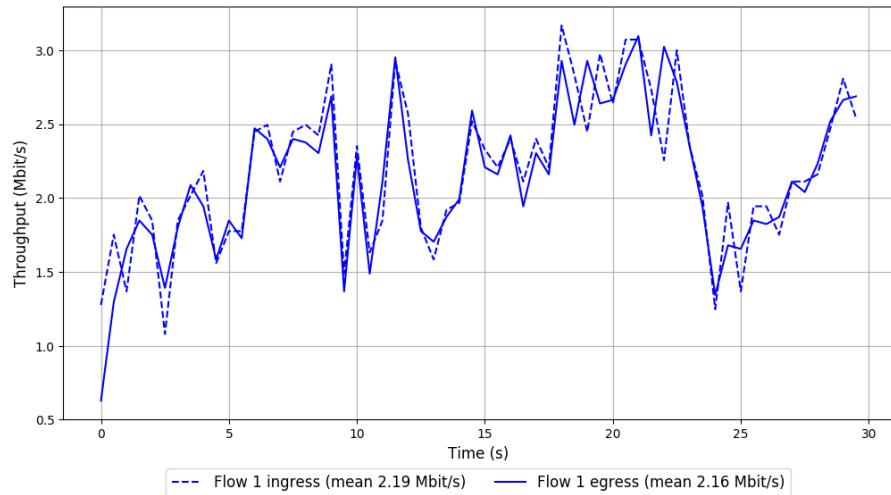


Run 3: Statistics of TCP Cubic

```
Start at: 2017-12-05 07:00:38
End at: 2017-12-05 07:01:08
Local clock offset: 3.904 ms
Remote clock offset: -19.86 ms

# Below is generated by plot.py at 2017-12-05 07:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 341.719 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 341.719 ms
Loss rate: 1.85%
```

Run 3: Report of TCP Cubic — Data Link

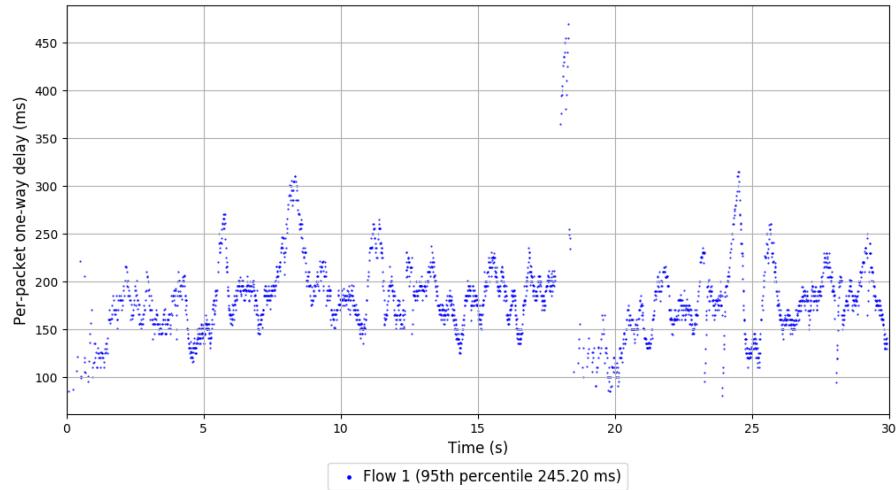
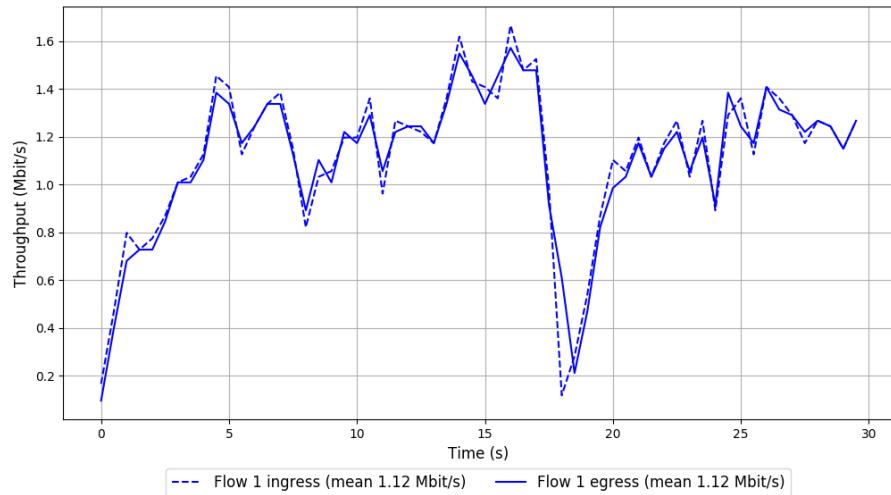


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2017-12-05 06:18:04
End at: 2017-12-05 06:18:34
Local clock offset: 7.114 ms
Remote clock offset: -19.002 ms

# Below is generated by plot.py at 2017-12-05 07:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 245.203 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 245.203 ms
Loss rate: 0.94%
```

Run 1: Report of LEDBAT — Data Link

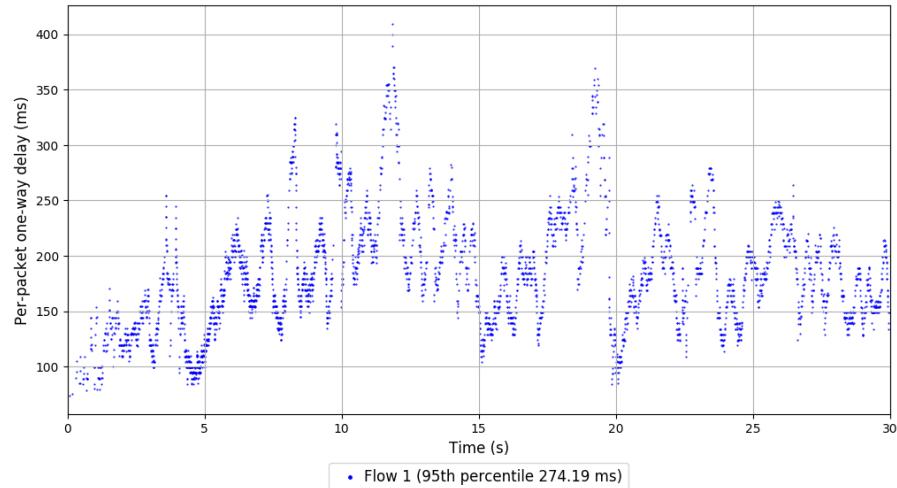
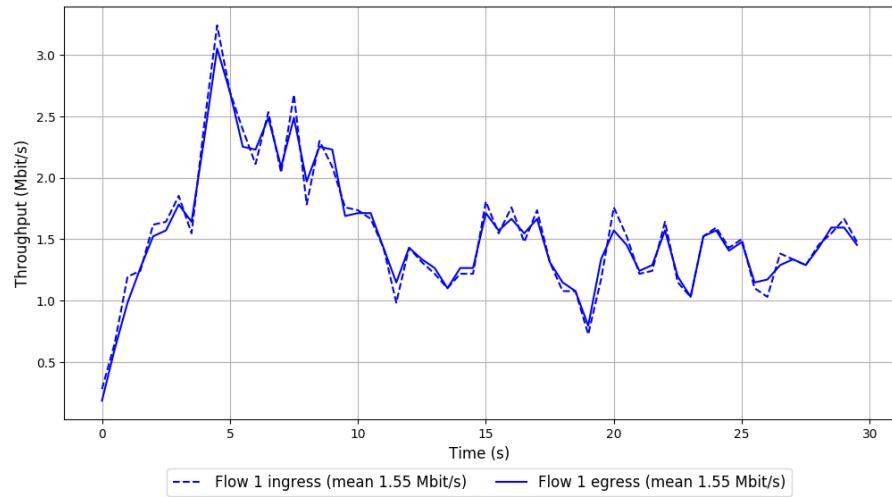


Run 2: Statistics of LEDBAT

```
Start at: 2017-12-05 06:33:23
End at: 2017-12-05 06:33:53
Local clock offset: 12.603 ms
Remote clock offset: -21.09 ms

# Below is generated by plot.py at 2017-12-05 07:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 274.191 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 274.191 ms
Loss rate: 0.58%
```

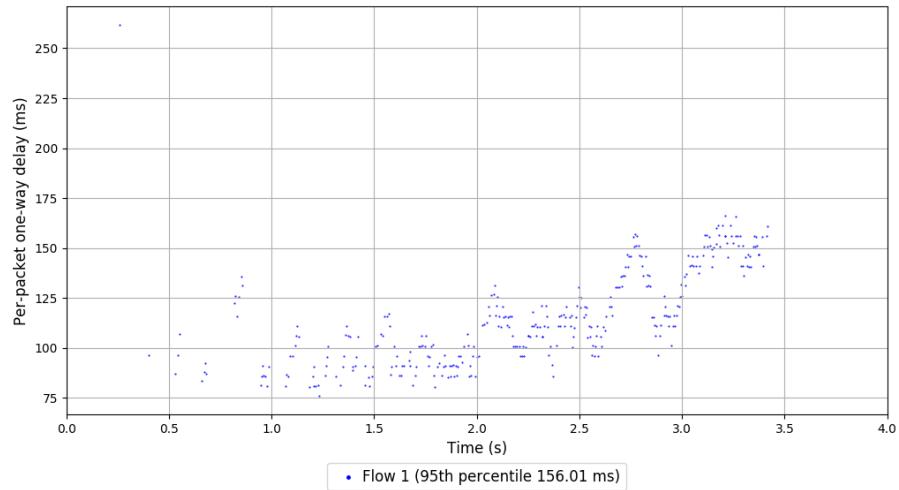
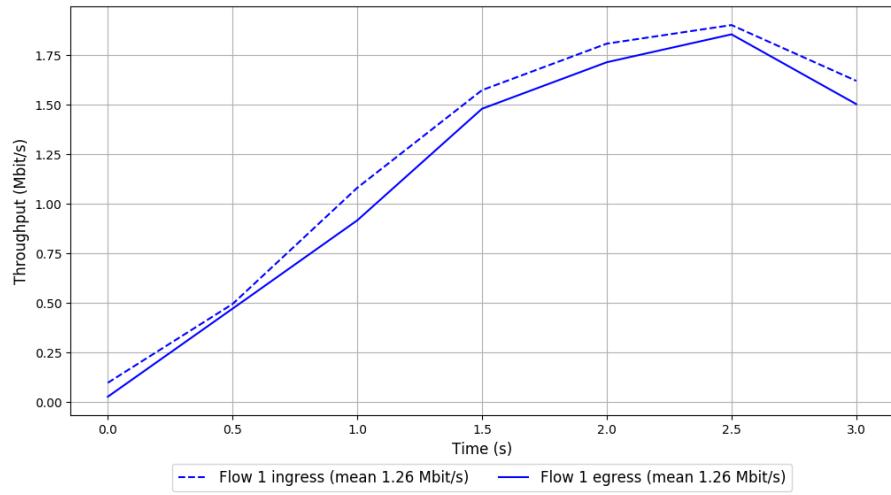
Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2017-12-05 06:48:38
End at: 2017-12-05 06:49:08
Local clock offset: 11.54 ms
Remote clock offset: -19.553 ms

Run 3: Report of LEDBAT — Data Link

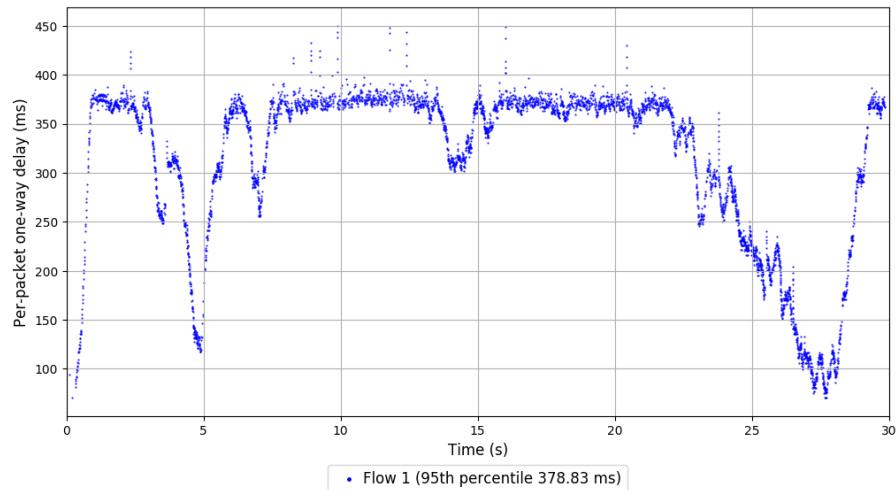
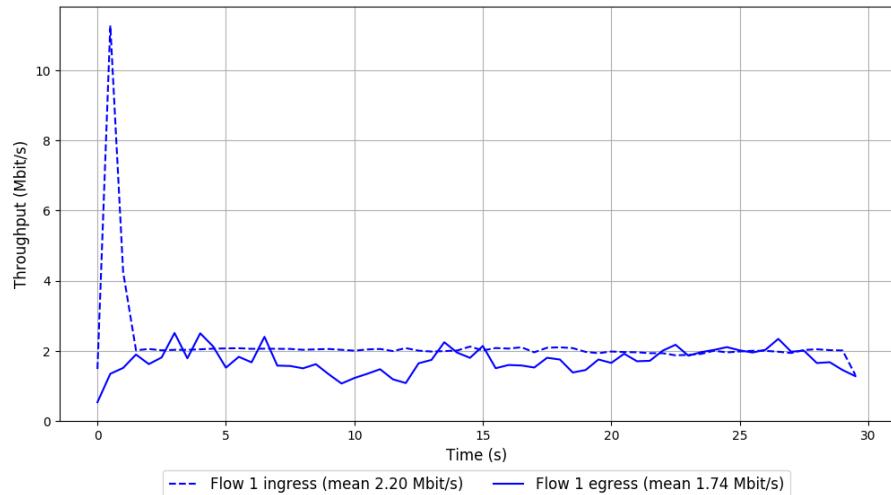


Run 1: Statistics of PCC

```
Start at: 2017-12-05 06:26:48
End at: 2017-12-05 06:27:18
Local clock offset: 13.754 ms
Remote clock offset: -21.065 ms

# Below is generated by plot.py at 2017-12-05 07:49:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 378.831 ms
Loss rate: 21.15%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 378.831 ms
Loss rate: 21.15%
```

Run 1: Report of PCC — Data Link

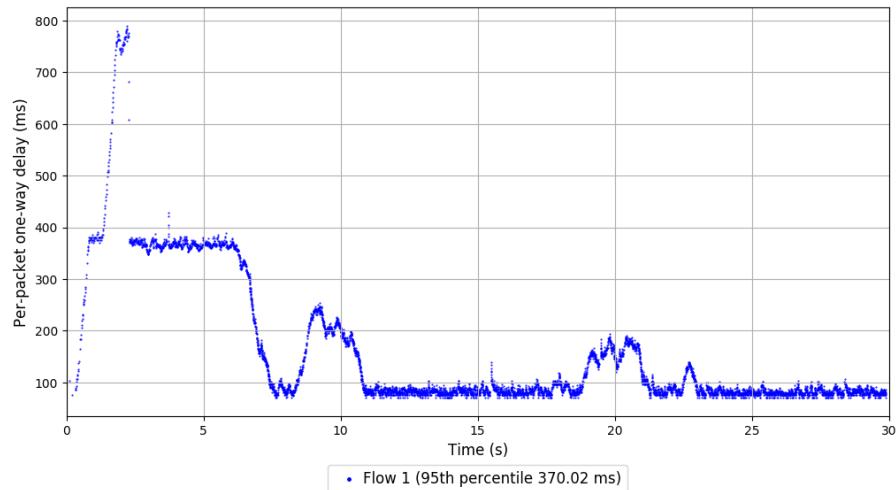
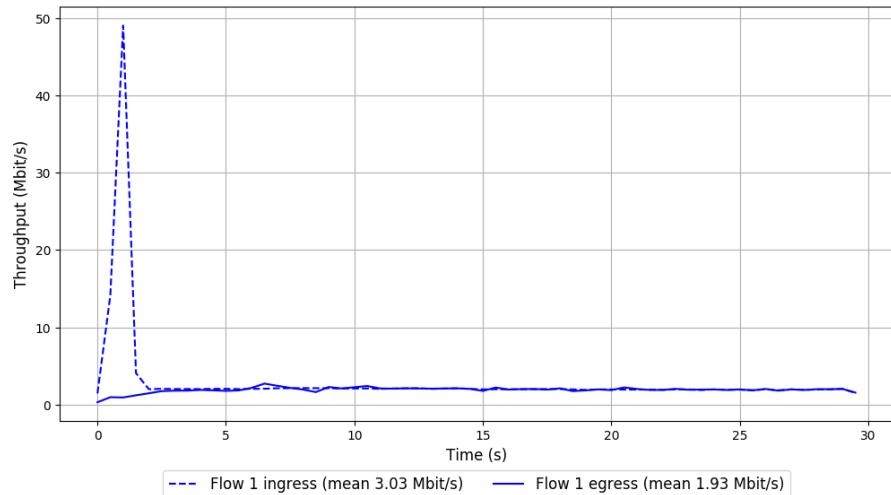


Run 2: Statistics of PCC

```
Start at: 2017-12-05 06:42:07
End at: 2017-12-05 06:42:37
Local clock offset: 12.551 ms
Remote clock offset: -20.771 ms

# Below is generated by plot.py at 2017-12-05 07:49:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 370.023 ms
Loss rate: 36.45%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 370.023 ms
Loss rate: 36.45%
```

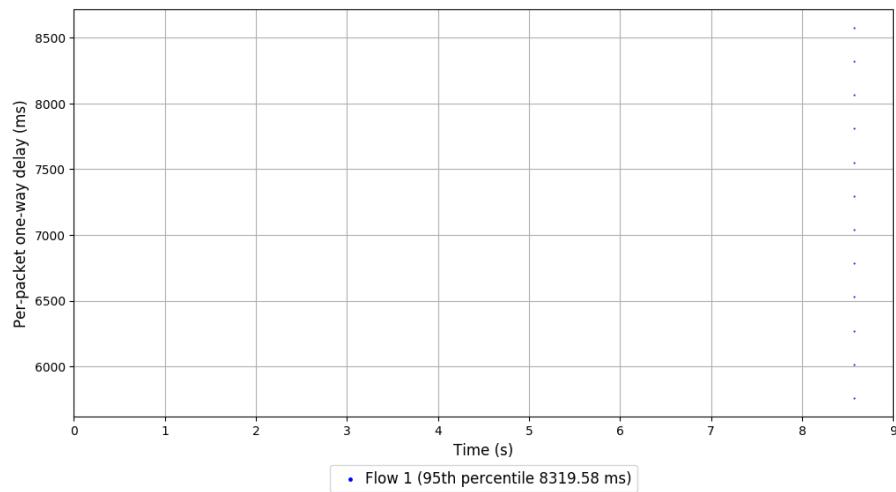
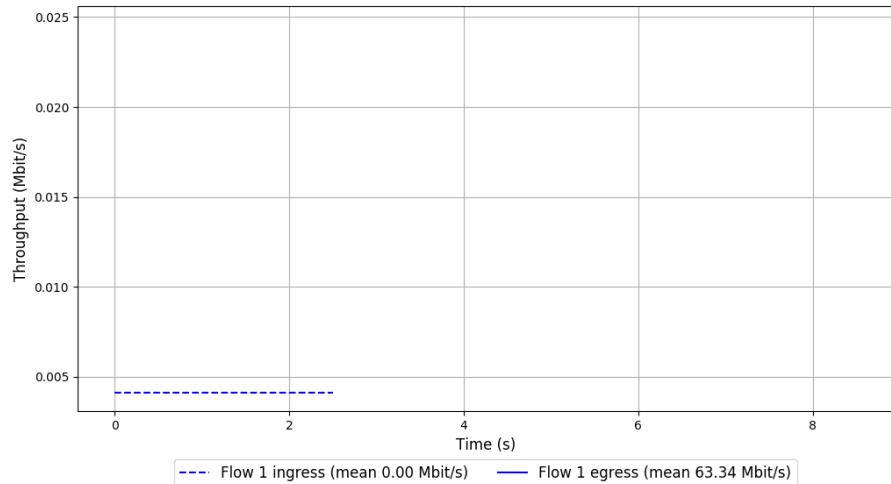
Run 2: Report of PCC — Data Link



Run 3: Statistics of PCC

Start at: 2017-12-05 06:57:21
End at: 2017-12-05 06:57:51
Local clock offset: -0.273 ms
Remote clock offset: -26.24 ms

Run 3: Report of PCC — Data Link

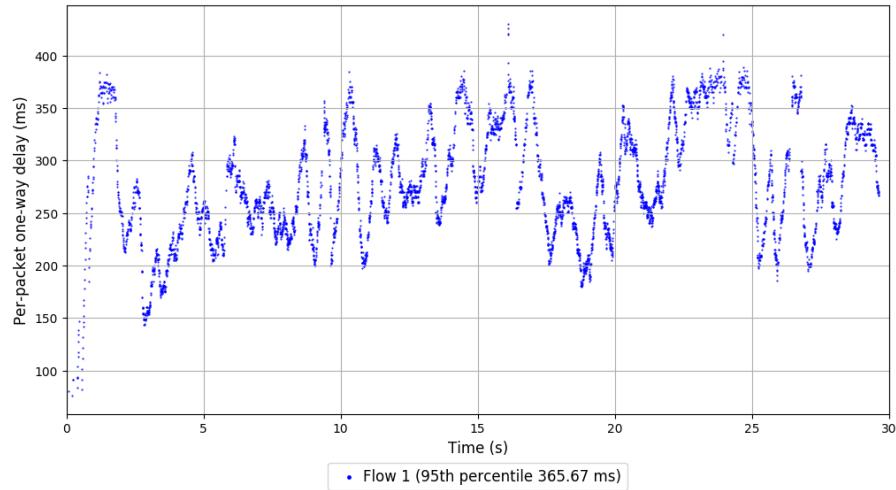
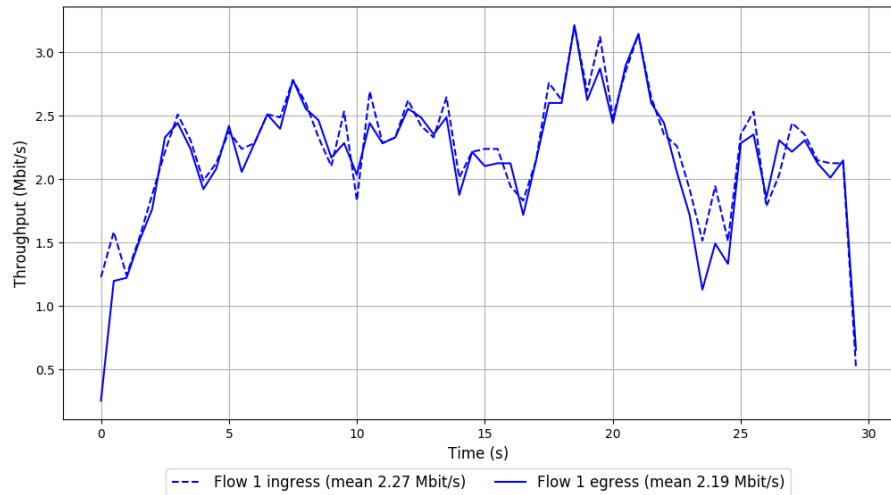


Run 1: Statistics of QUIC Cubic

```
Start at: 2017-12-05 06:28:58
End at: 2017-12-05 06:29:28
Local clock offset: 14.879 ms
Remote clock offset: -20.165 ms

# Below is generated by plot.py at 2017-12-05 07:49:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 365.673 ms
Loss rate: 3.36%
-- Flow 1:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 365.673 ms
Loss rate: 3.36%
```

Run 1: Report of QUIC Cubic — Data Link

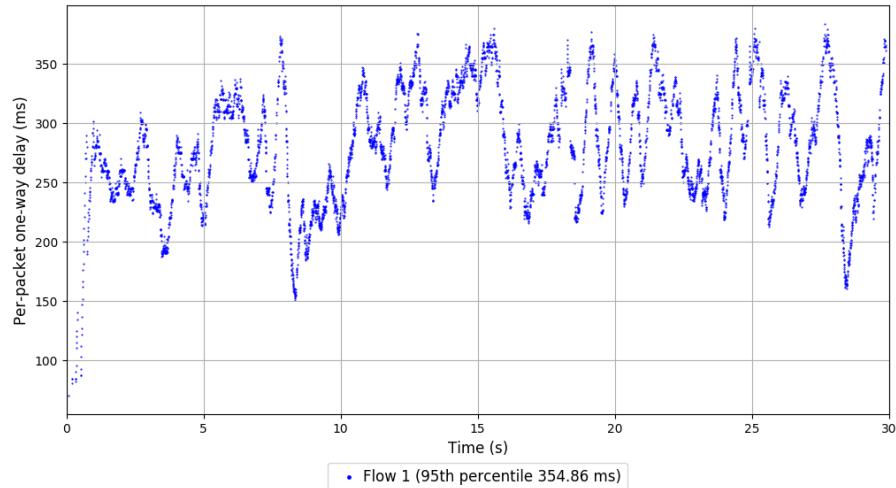
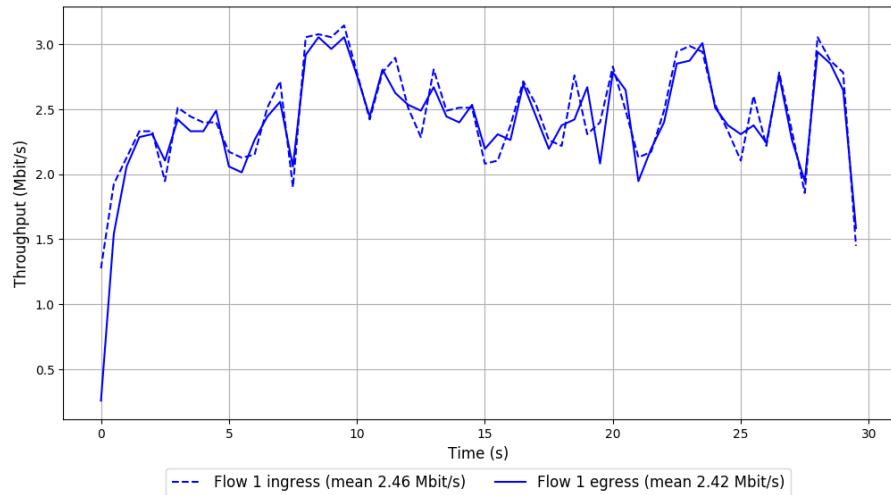


Run 2: Statistics of QUIC Cubic

```
Start at: 2017-12-05 06:44:17
End at: 2017-12-05 06:44:47
Local clock offset: 11.774 ms
Remote clock offset: -20.227 ms

# Below is generated by plot.py at 2017-12-05 07:49:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 354.855 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 354.855 ms
Loss rate: 1.95%
```

Run 2: Report of QUIC Cubic — Data Link

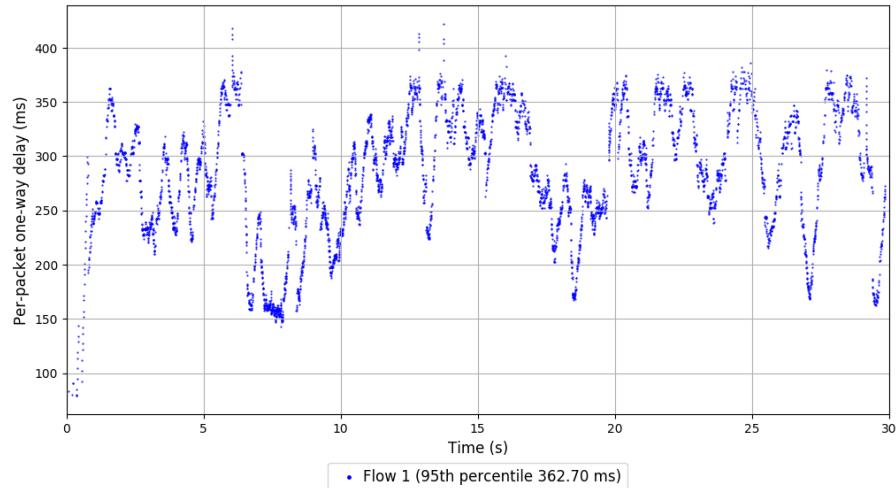
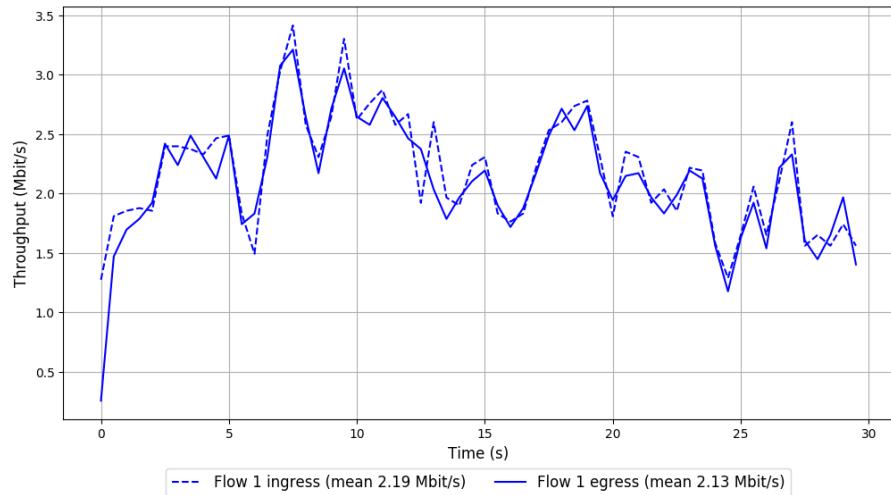


Run 3: Statistics of QUIC Cubic

```
Start at: 2017-12-05 06:59:32
End at: 2017-12-05 07:00:02
Local clock offset: 2.97 ms
Remote clock offset: -19.944 ms

# Below is generated by plot.py at 2017-12-05 07:49:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 362.697 ms
Loss rate: 3.26%
-- Flow 1:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 362.697 ms
Loss rate: 3.26%
```

Run 3: Report of QUIC Cubic — Data Link

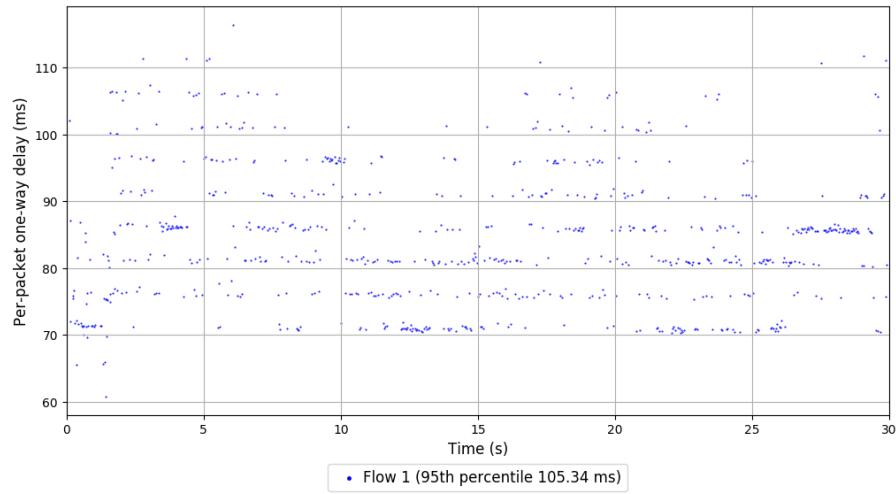
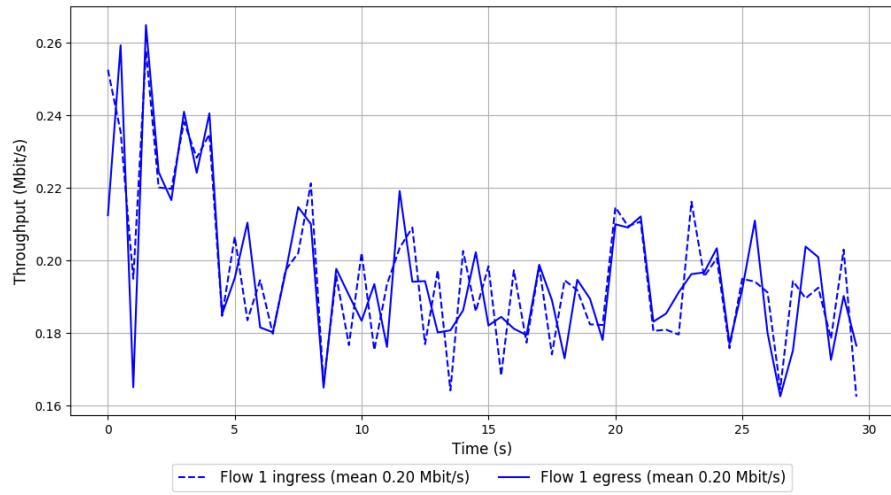


```
Run 1: Statistics of SCReAM
```

```
Start at: 2017-12-05 06:19:09
End at: 2017-12-05 06:19:39
Local clock offset: 8.443 ms
Remote clock offset: -18.971 ms

# Below is generated by plot.py at 2017-12-05 07:49:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 105.340 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 105.340 ms
Loss rate: 0.25%
```

Run 1: Report of SCReAM — Data Link

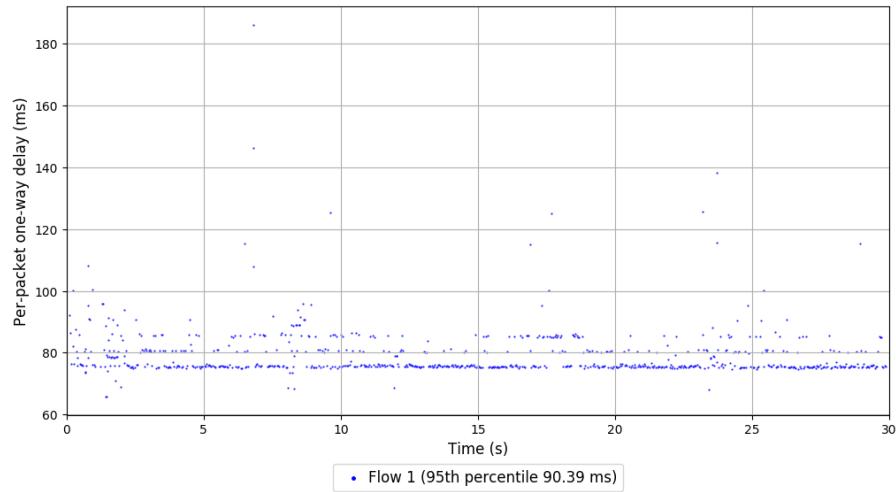
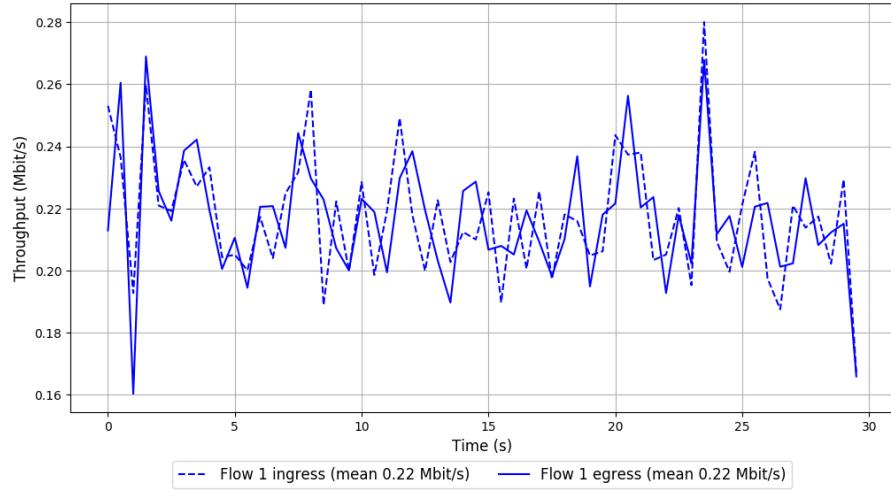


Run 2: Statistics of SCReAM

```
Start at: 2017-12-05 06:34:29
End at: 2017-12-05 06:34:59
Local clock offset: 15.241 ms
Remote clock offset: -20.836 ms

# Below is generated by plot.py at 2017-12-05 07:49:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 90.390 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 90.390 ms
Loss rate: 0.25%
```

Run 2: Report of SCReAM — Data Link

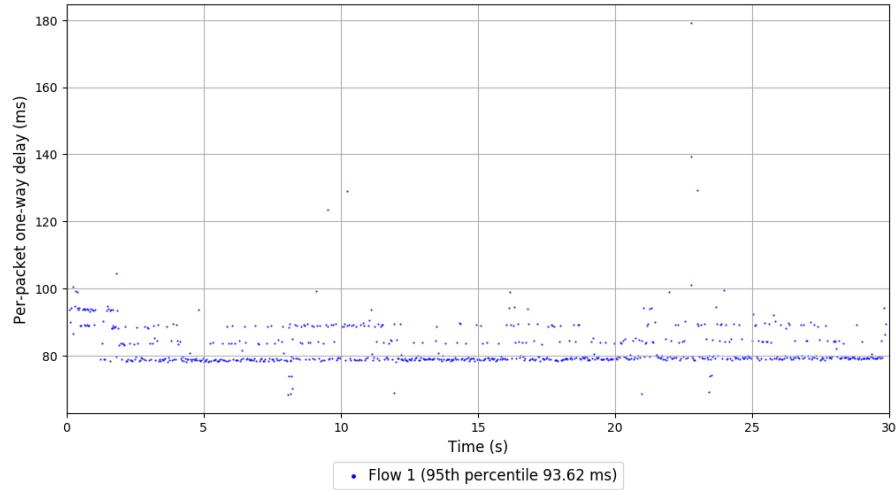
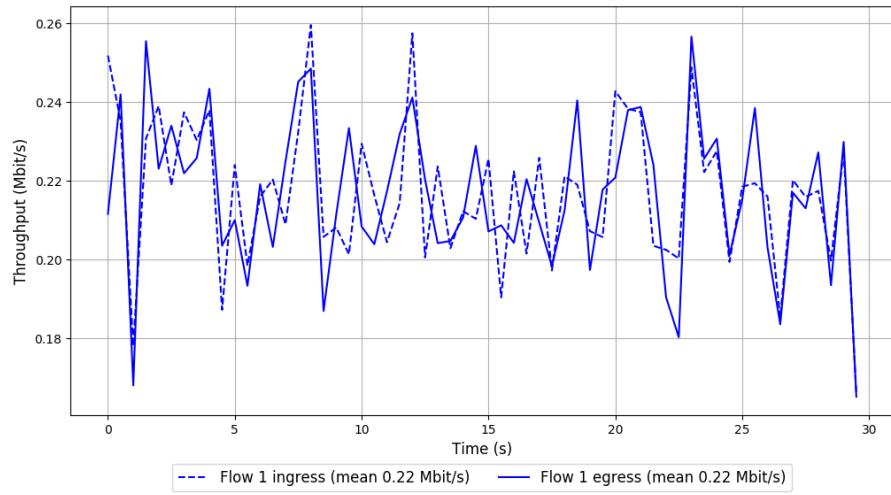


Run 3: Statistics of SCReAM

```
Start at: 2017-12-05 06:49:43
End at: 2017-12-05 06:50:13
Local clock offset: 10.269 ms
Remote clock offset: -20.306 ms

# Below is generated by plot.py at 2017-12-05 07:49:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 93.620 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 93.620 ms
Loss rate: 0.25%
```

Run 3: Report of SCReAM — Data Link

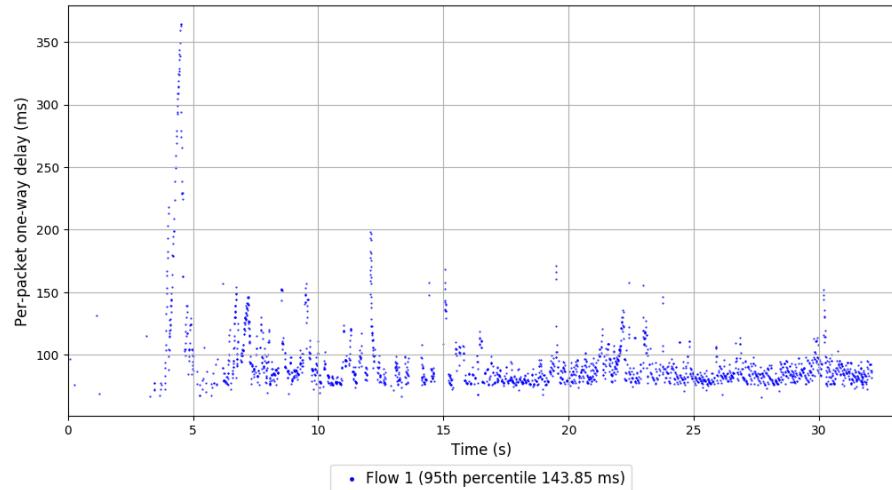
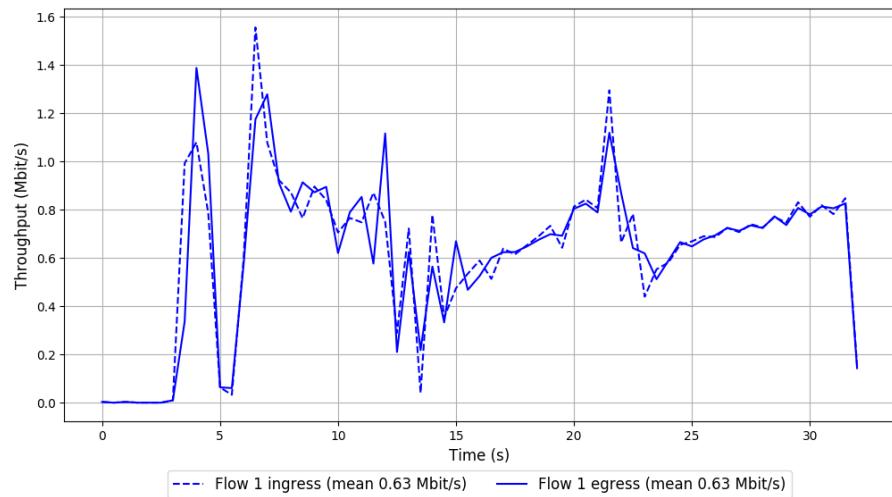


```
Run 1: Statistics of WebRTC media

Start at: 2017-12-05 06:27:53
End at: 2017-12-05 06:28:23
Local clock offset: 15.667 ms
Remote clock offset: -21.502 ms

# Below is generated by plot.py at 2017-12-05 07:49:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 143.848 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 143.848 ms
Loss rate: 0.55%
```

Run 1: Report of WebRTC media — Data Link

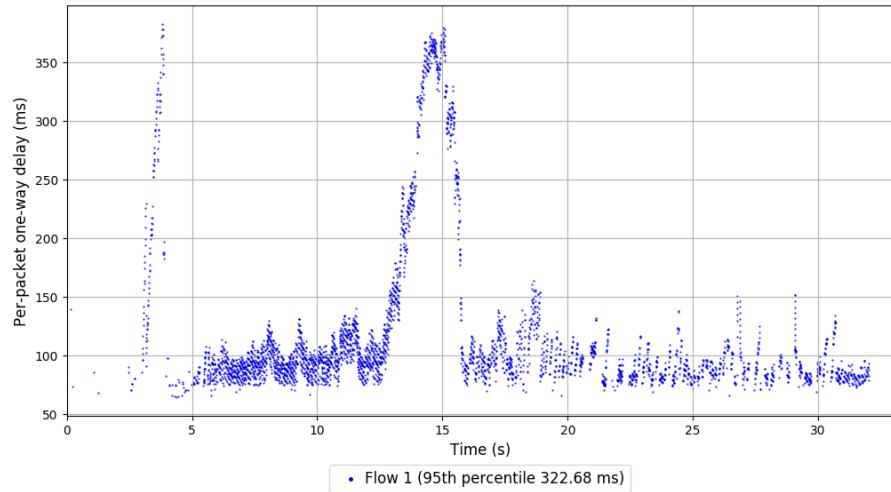
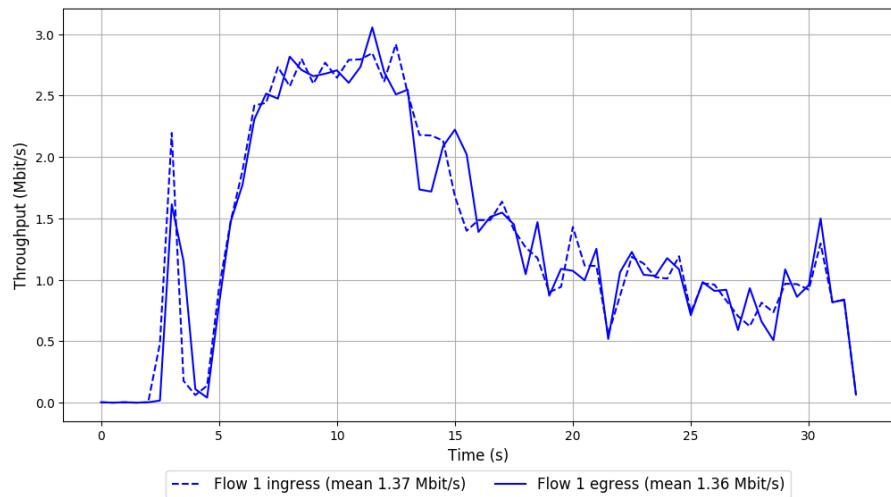


Run 2: Statistics of WebRTC media

```
Start at: 2017-12-05 06:43:12
End at: 2017-12-05 06:43:42
Local clock offset: 12.904 ms
Remote clock offset: -21.122 ms

# Below is generated by plot.py at 2017-12-05 07:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 322.684 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 322.684 ms
Loss rate: 0.69%
```

Run 2: Report of WebRTC media — Data Link

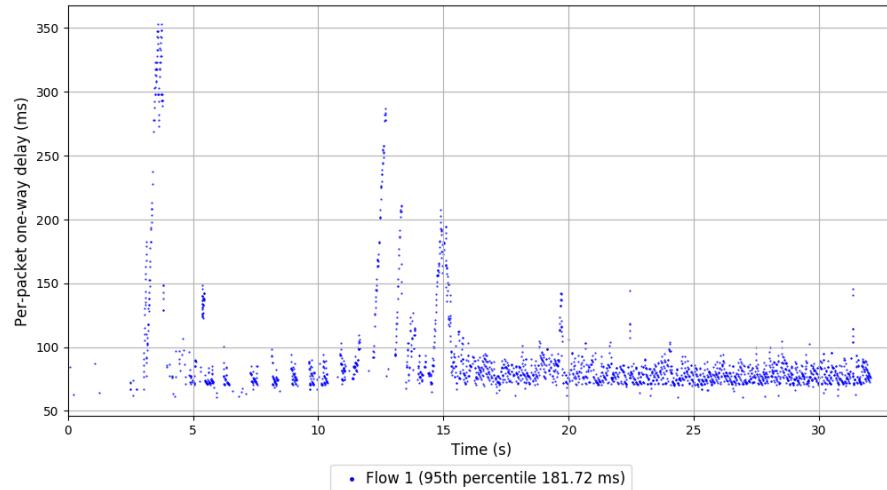
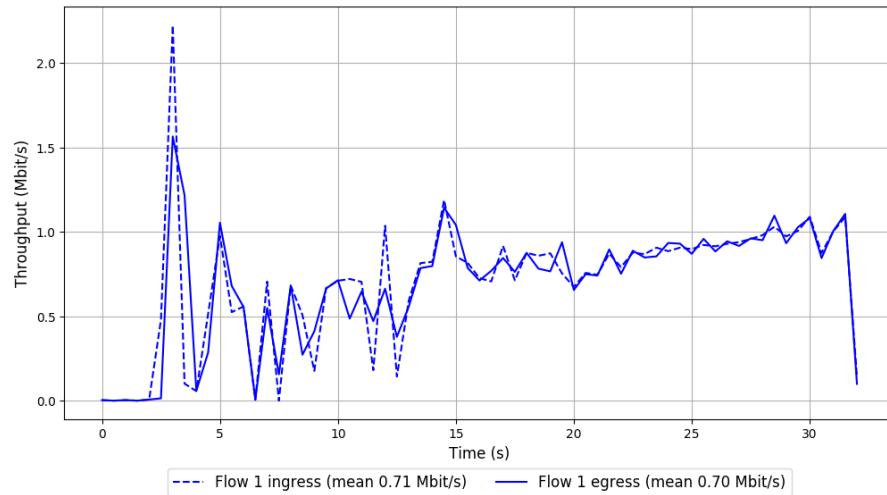


Run 3: Statistics of WebRTC media

```
Start at: 2017-12-05 06:58:26
End at: 2017-12-05 06:58:56
Local clock offset: 2.478 ms
Remote clock offset: -19.852 ms

# Below is generated by plot.py at 2017-12-05 07:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 181.725 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 181.725 ms
Loss rate: 0.42%
```

Run 3: Report of WebRTC media — Data Link

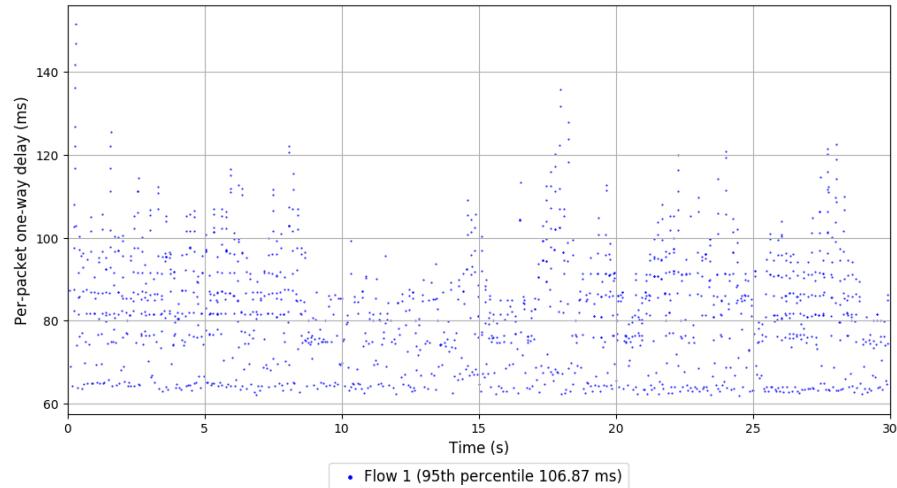
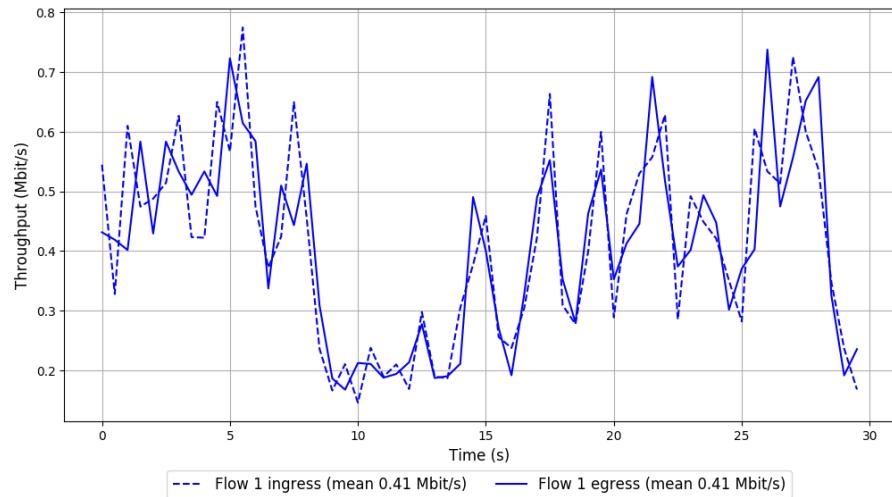


Run 1: Statistics of Sprout

```
Start at: 2017-12-05 06:24:36
End at: 2017-12-05 06:25:06
Local clock offset: 13.907 ms
Remote clock offset: -20.75 ms

# Below is generated by plot.py at 2017-12-05 07:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 106.866 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 106.866 ms
Loss rate: 0.09%
```

Run 1: Report of Sprout — Data Link

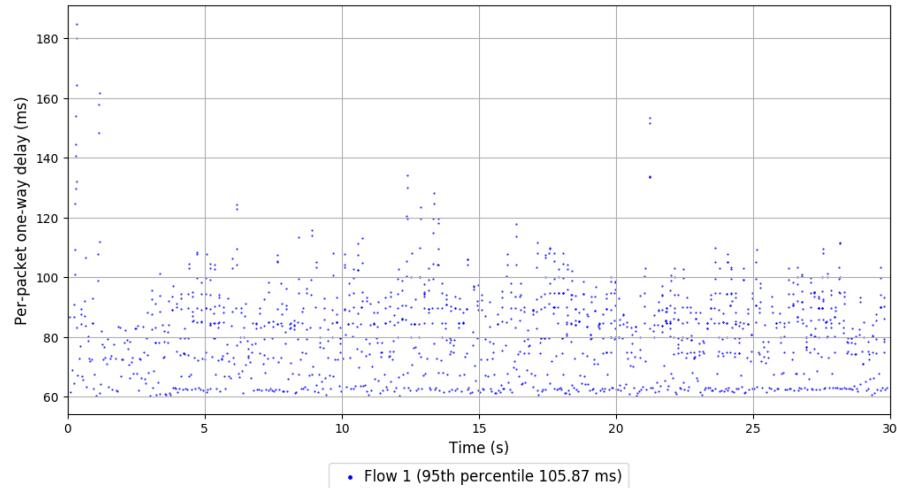
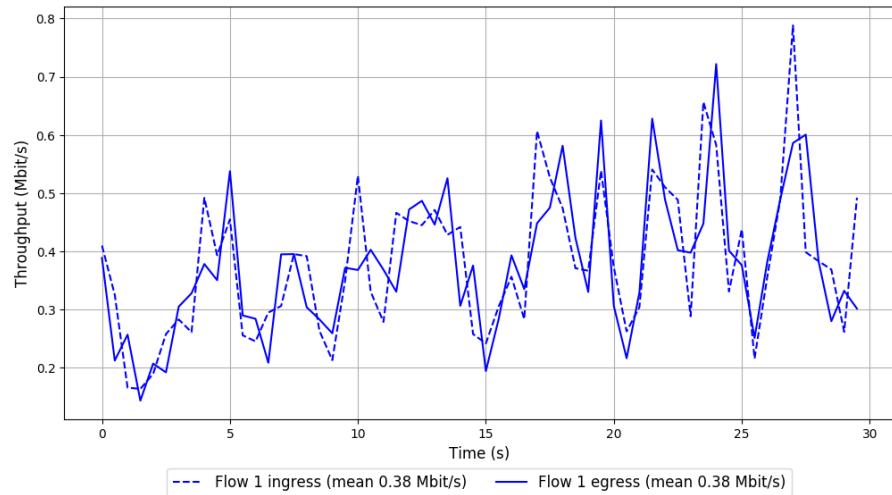


Run 2: Statistics of Sprout

```
Start at: 2017-12-05 06:39:57
End at: 2017-12-05 06:40:27
Local clock offset: 11.366 ms
Remote clock offset: -20.202 ms

# Below is generated by plot.py at 2017-12-05 07:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 105.867 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 105.867 ms
Loss rate: 1.01%
```

Run 2: Report of Sprout — Data Link

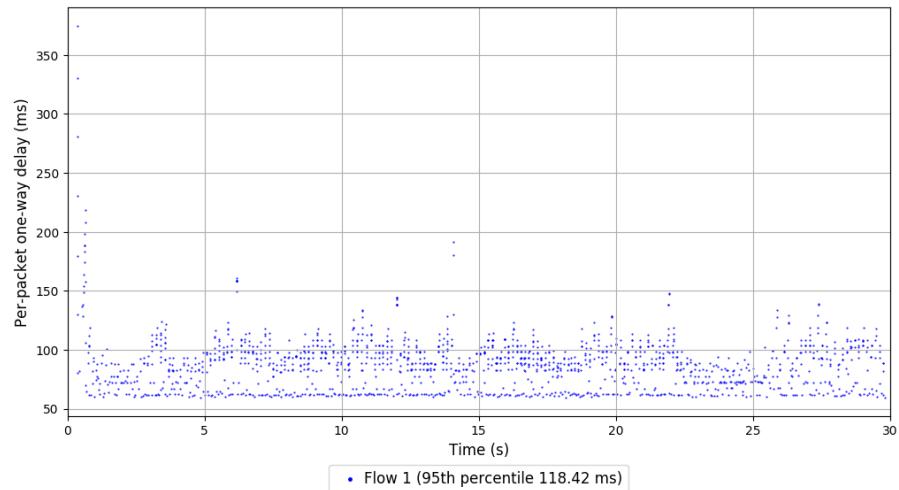
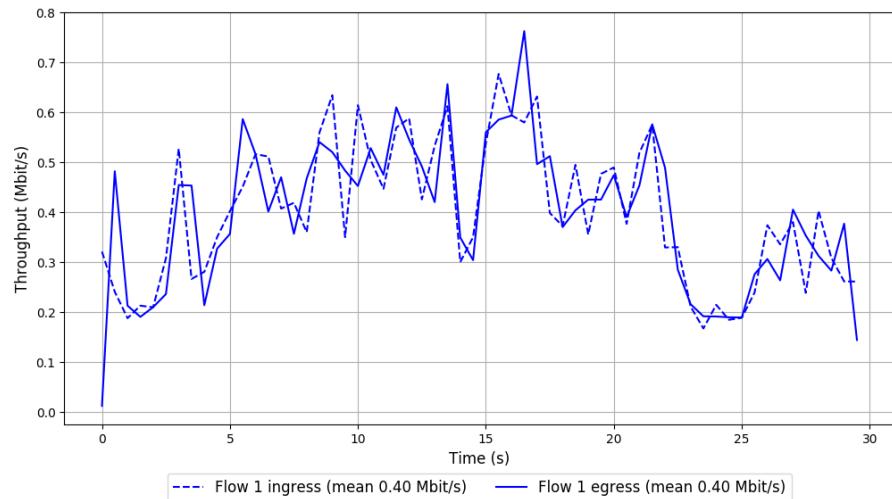


Run 3: Statistics of Sprout

```
Start at: 2017-12-05 06:55:10
End at: 2017-12-05 06:55:40
Local clock offset: 2.59 ms
Remote clock offset: -20.053 ms

# Below is generated by plot.py at 2017-12-05 07:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 118.423 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 118.423 ms
Loss rate: 0.58%
```

Run 3: Report of Sprout — Data Link

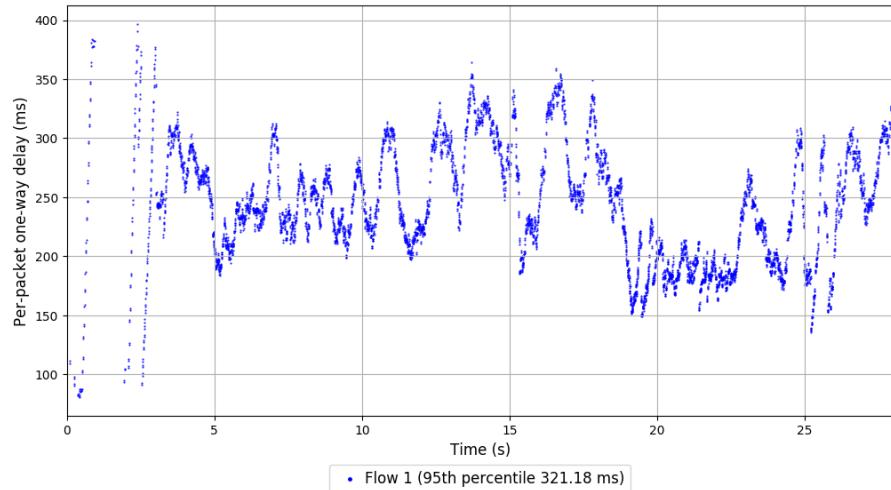
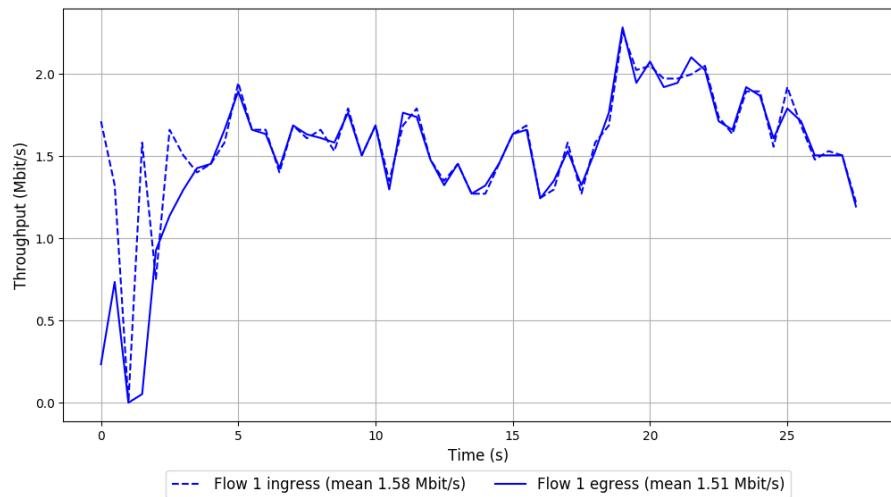


Run 1: Statistics of TaoVA-100x

```
Start at: 2017-12-05 06:22:25
End at: 2017-12-05 06:22:55
Local clock offset: 12.959 ms
Remote clock offset: -19.509 ms

# Below is generated by plot.py at 2017-12-05 07:49:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 321.181 ms
Loss rate: 4.69%
-- Flow 1:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 321.181 ms
Loss rate: 4.69%
```

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

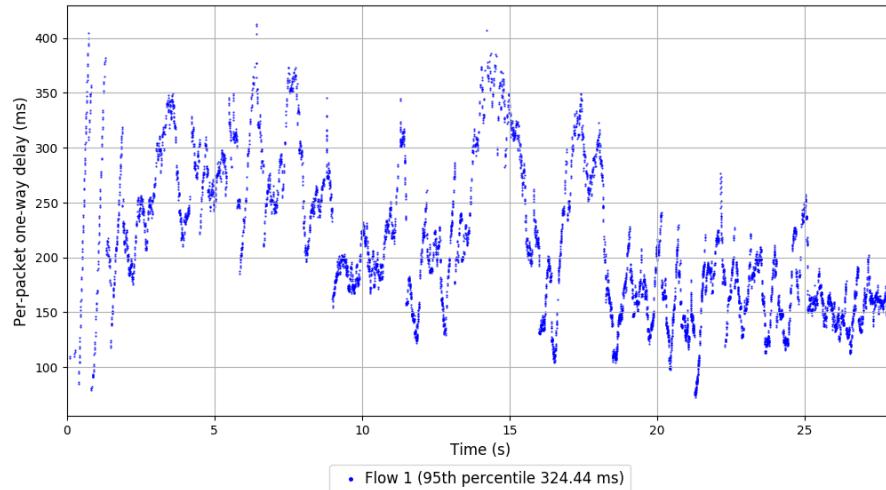
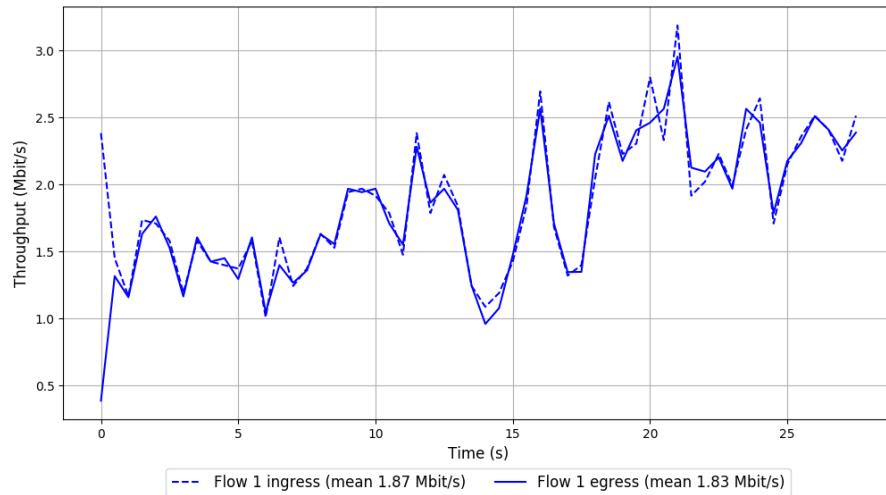


Run 2: Statistics of TaoVA-100x

```
Start at: 2017-12-05 06:37:45
End at: 2017-12-05 06:38:15
Local clock offset: 13.642 ms
Remote clock offset: -20.318 ms

# Below is generated by plot.py at 2017-12-05 07:49:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 324.438 ms
Loss rate: 2.60%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 324.438 ms
Loss rate: 2.60%
```

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

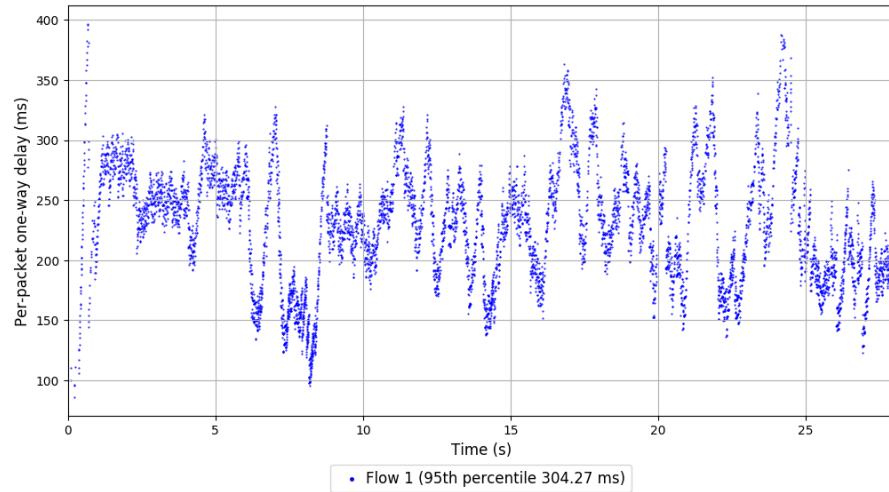
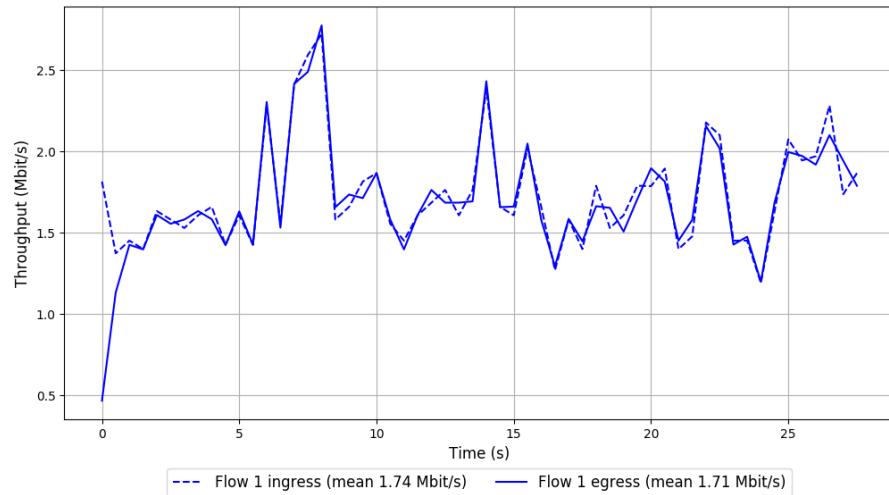


Run 3: Statistics of TaoVA-100x

```
Start at: 2017-12-05 06:53:00
End at: 2017-12-05 06:53:30
Local clock offset: 7.324 ms
Remote clock offset: -19.427 ms

# Below is generated by plot.py at 2017-12-05 07:49:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 304.271 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 304.271 ms
Loss rate: 1.79%
```

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

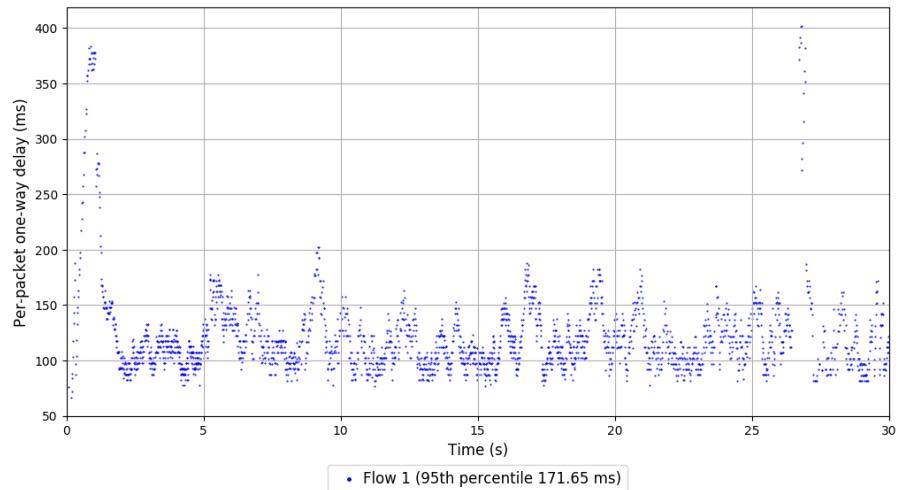
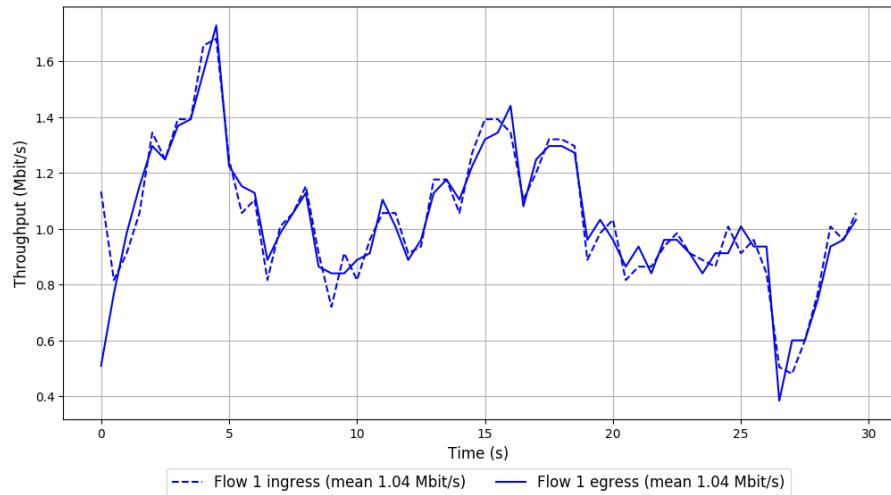


Run 1: Statistics of TCP Vegas

```
Start at: 2017-12-05 06:20:14
End at: 2017-12-05 06:20:44
Local clock offset: 9.716 ms
Remote clock offset: -19.885 ms

# Below is generated by plot.py at 2017-12-05 07:49:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 171.646 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 171.646 ms
Loss rate: 0.81%
```

Run 1: Report of TCP Vegas — Data Link

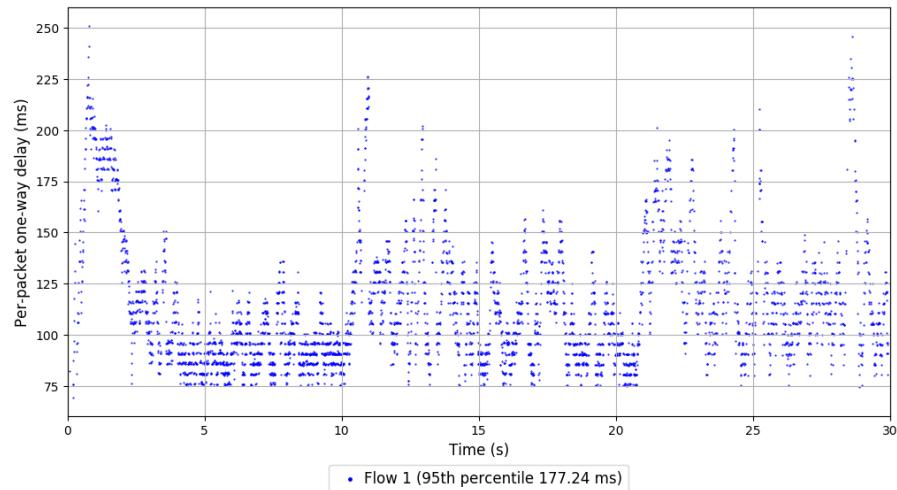
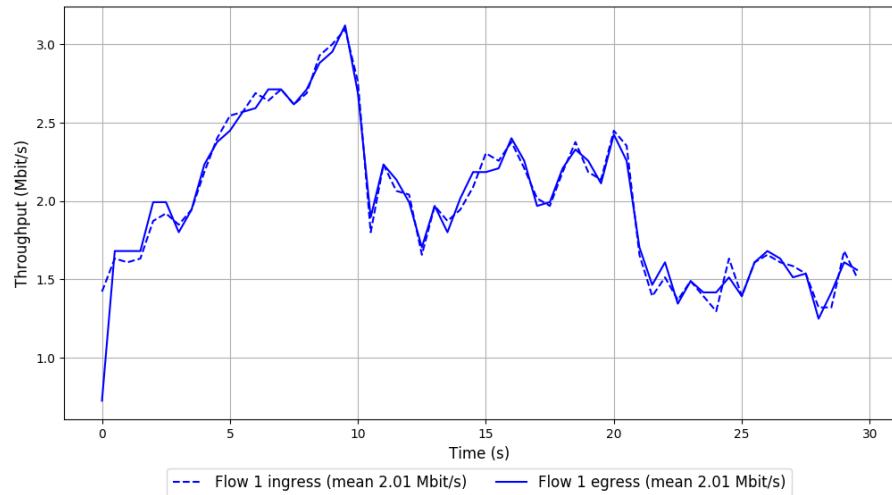


Run 2: Statistics of TCP Vegas

```
Start at: 2017-12-05 06:35:34
End at: 2017-12-05 06:36:04
Local clock offset: 12.449 ms
Remote clock offset: -20.21 ms

# Below is generated by plot.py at 2017-12-05 07:49:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 177.244 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 177.244 ms
Loss rate: 0.30%
```

Run 2: Report of TCP Vegas — Data Link

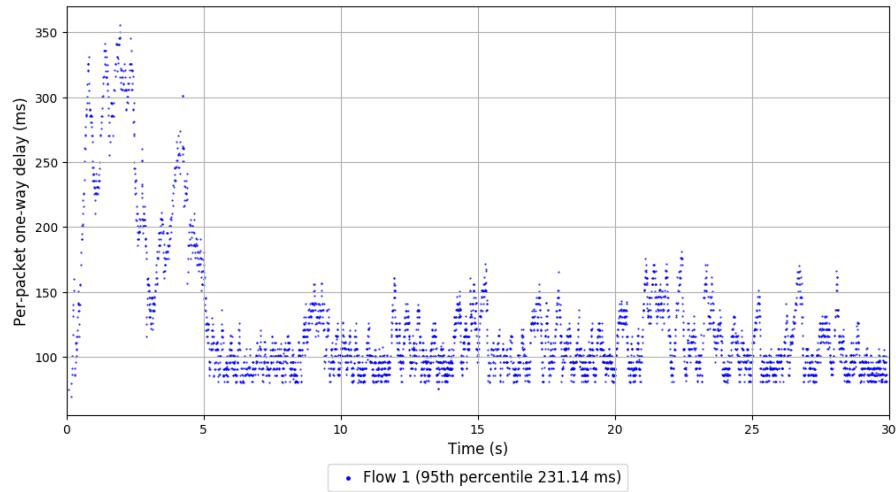
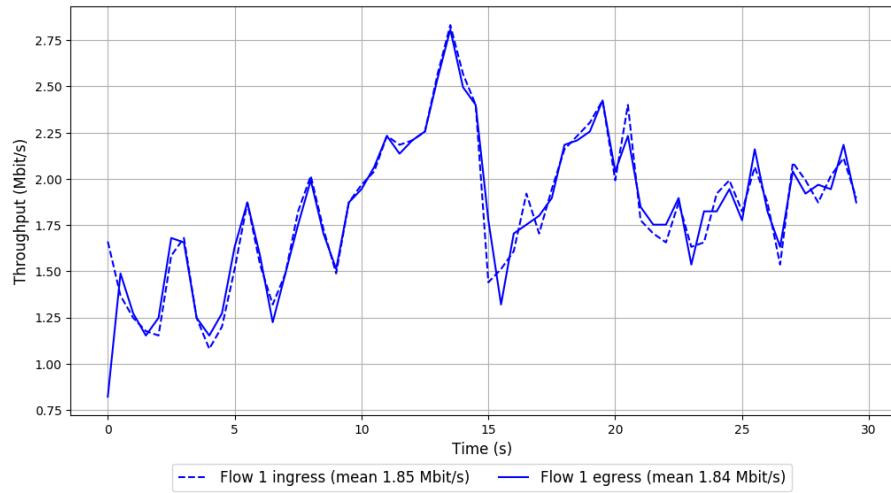


Run 3: Statistics of TCP Vegas

```
Start at: 2017-12-05 06:50:49
End at: 2017-12-05 06:51:19
Local clock offset: 9.982 ms
Remote clock offset: -19.29 ms

# Below is generated by plot.py at 2017-12-05 07:49:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 231.142 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 231.142 ms
Loss rate: 0.39%
```

Run 3: Report of TCP Vegas — Data Link

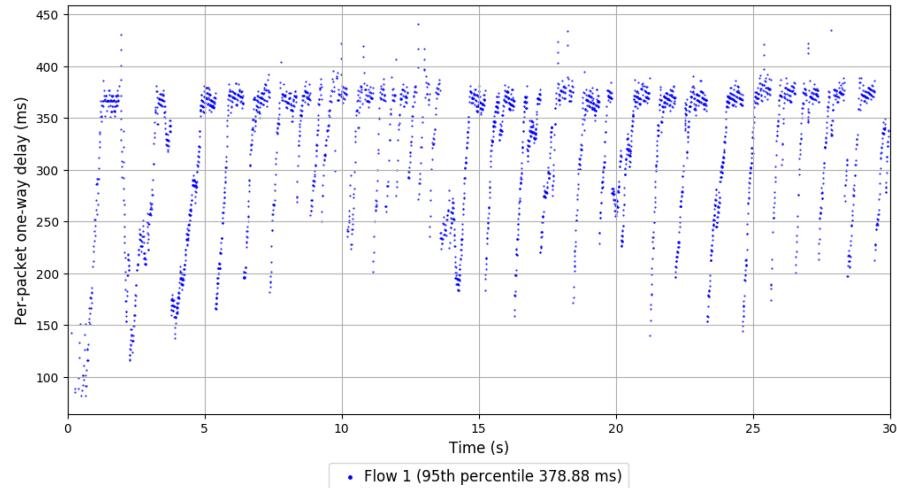
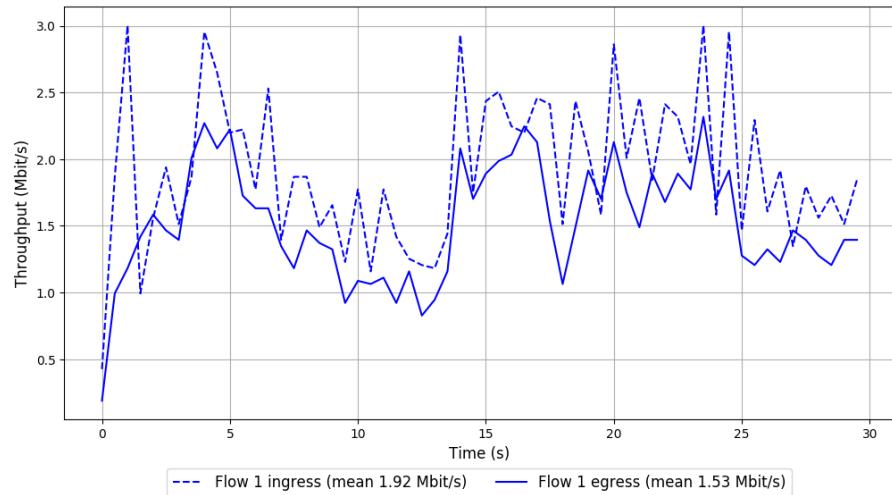


Run 1: Statistics of Verus

```
Start at: 2017-12-05 06:31:10
End at: 2017-12-05 06:31:40
Local clock offset: 13.356 ms
Remote clock offset: -21.063 ms

# Below is generated by plot.py at 2017-12-05 07:49:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 378.883 ms
Loss rate: 20.87%
-- Flow 1:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 378.883 ms
Loss rate: 20.87%
```

Run 1: Report of Verus — Data Link

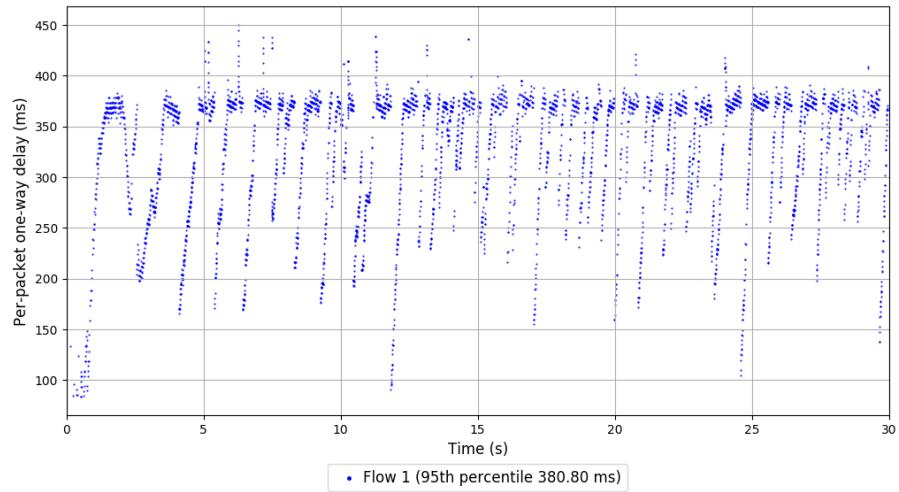
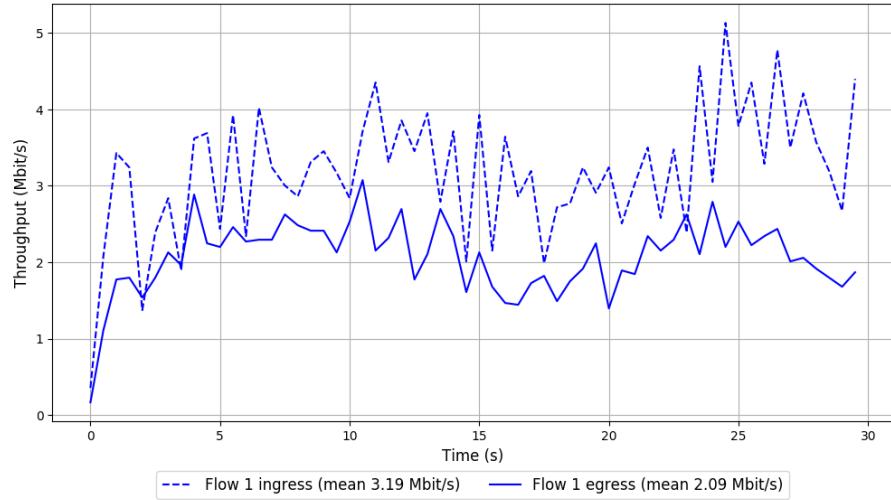


Run 2: Statistics of Verus

```
Start at: 2017-12-05 06:46:28
End at: 2017-12-05 06:46:58
Local clock offset: 14.374 ms
Remote clock offset: -20.979 ms

# Below is generated by plot.py at 2017-12-05 07:49:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 380.796 ms
Loss rate: 34.93%
-- Flow 1:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 380.796 ms
Loss rate: 34.93%
```

Run 2: Report of Verus — Data Link

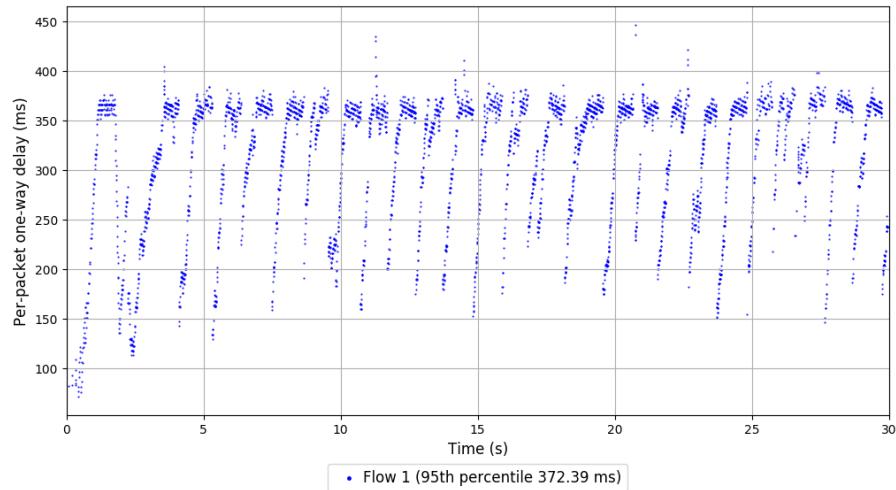
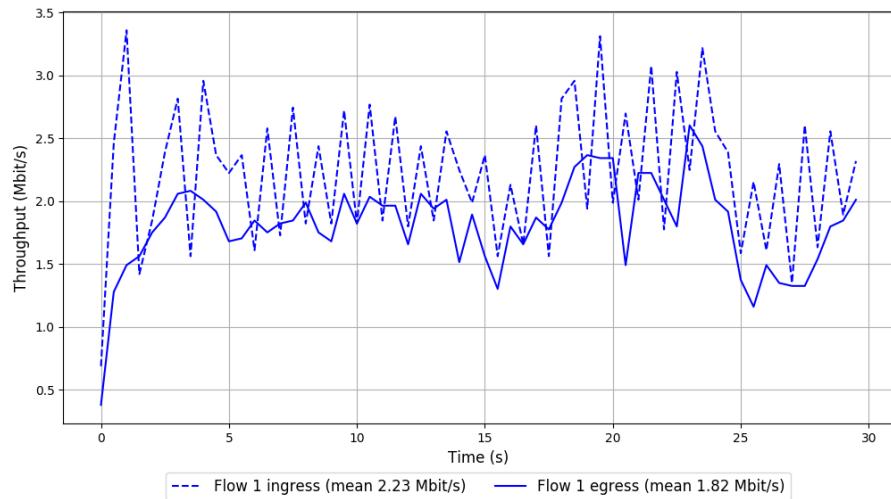


Run 3: Statistics of Verus

```
Start at: 2017-12-05 07:01:44
End at: 2017-12-05 07:02:14
Local clock offset: 3.652 ms
Remote clock offset: -19.936 ms

# Below is generated by plot.py at 2017-12-05 07:49:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 372.391 ms
Loss rate: 18.84%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 372.391 ms
Loss rate: 18.84%
```

Run 3: Report of Verus — Data Link

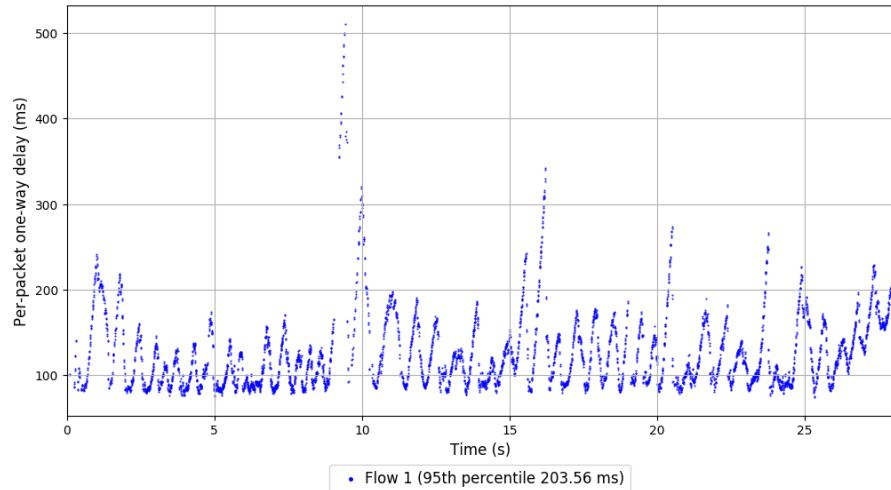
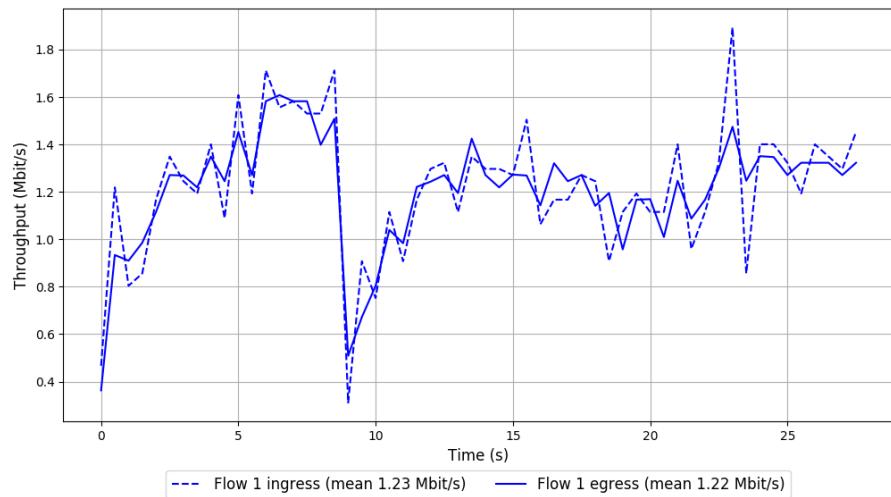


Run 1: Statistics of Copa

```
Start at: 2017-12-05 06:23:30
End at: 2017-12-05 06:24:00
Local clock offset: 13.72 ms
Remote clock offset: -21.634 ms

# Below is generated by plot.py at 2017-12-05 07:49:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 203.559 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 203.559 ms
Loss rate: 1.23%
```

Run 1: Report of Copa — Data Link

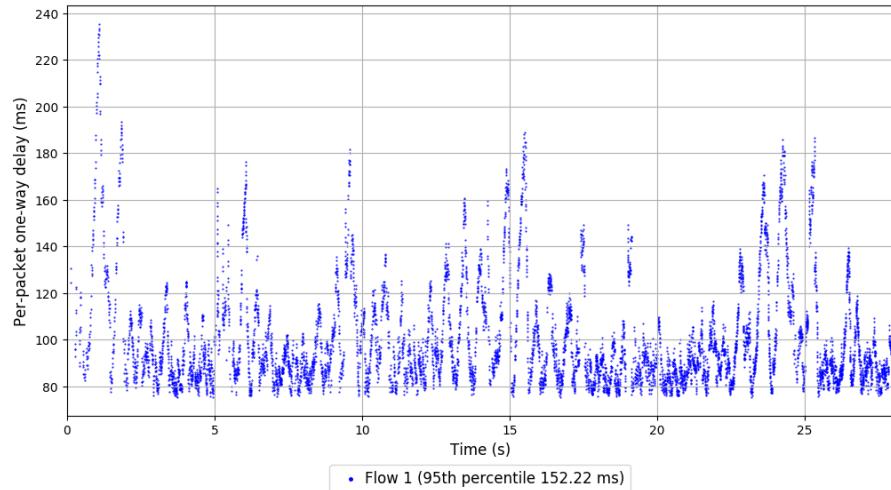
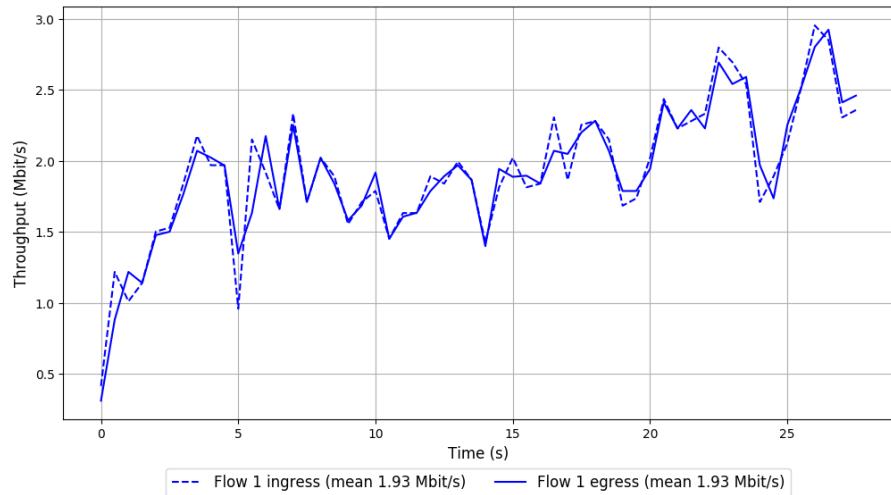


Run 2: Statistics of Copa

```
Start at: 2017-12-05 06:38:51
End at: 2017-12-05 06:39:21
Local clock offset: 15.376 ms
Remote clock offset: -20.534 ms

# Below is generated by plot.py at 2017-12-05 07:49:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 152.217 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 152.217 ms
Loss rate: 0.31%
```

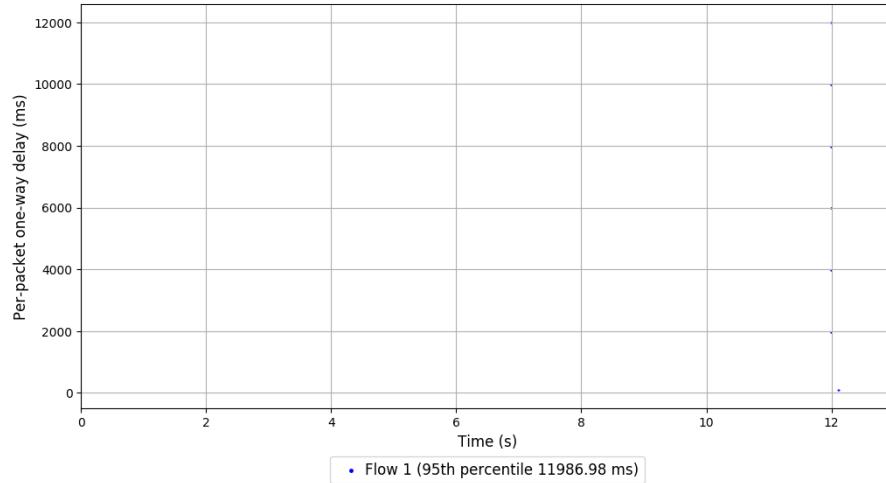
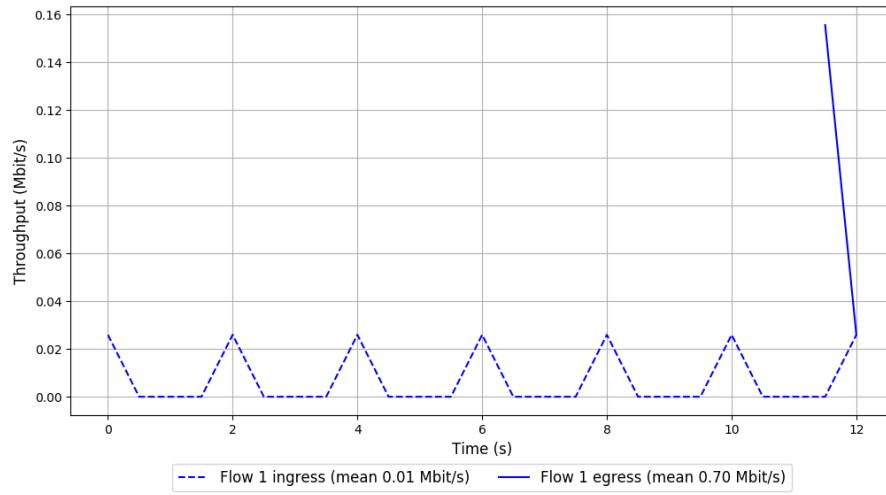
Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2017-12-05 06:54:06
End at: 2017-12-05 06:54:36
Local clock offset: 4.101 ms
Remote clock offset: -21.798 ms

Run 3: Report of Copa — Data Link

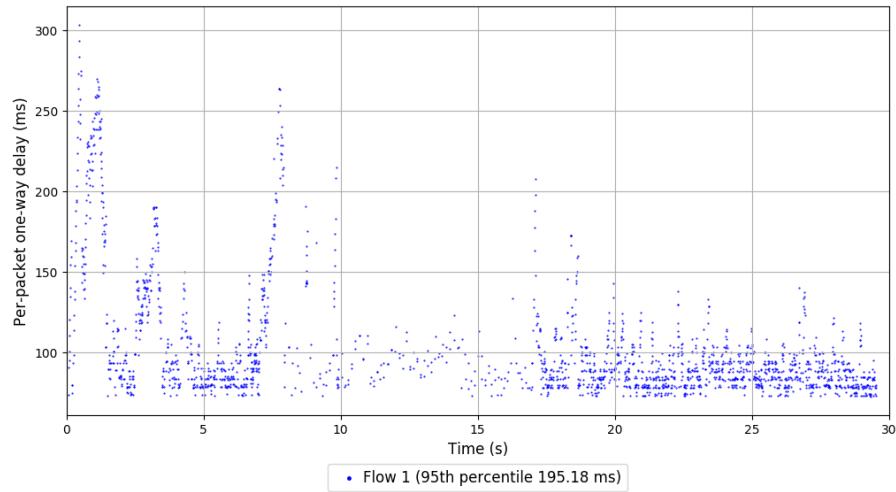
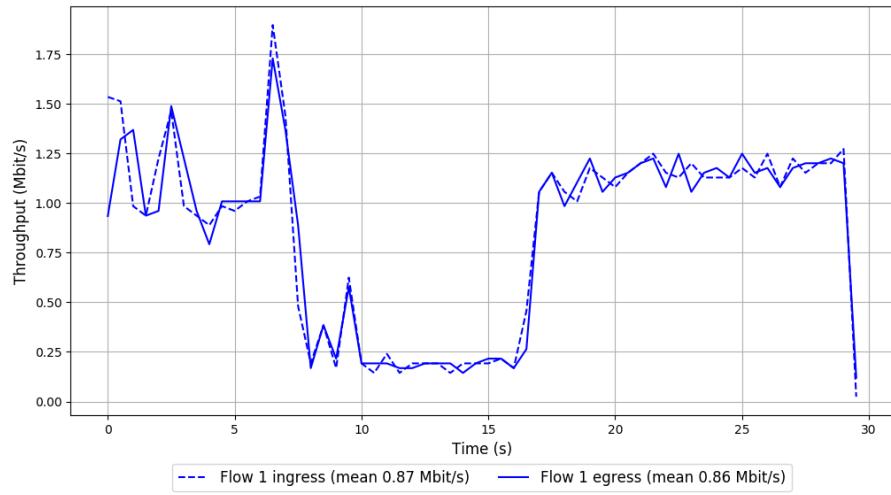


Run 1: Statistics of Indigo

```
Start at: 2017-12-05 06:25:41
End at: 2017-12-05 06:26:11
Local clock offset: 13.381 ms
Remote clock offset: -20.055 ms

# Below is generated by plot.py at 2017-12-05 07:49:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 195.183 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 195.183 ms
Loss rate: 0.75%
```

Run 1: Report of Indigo — Data Link

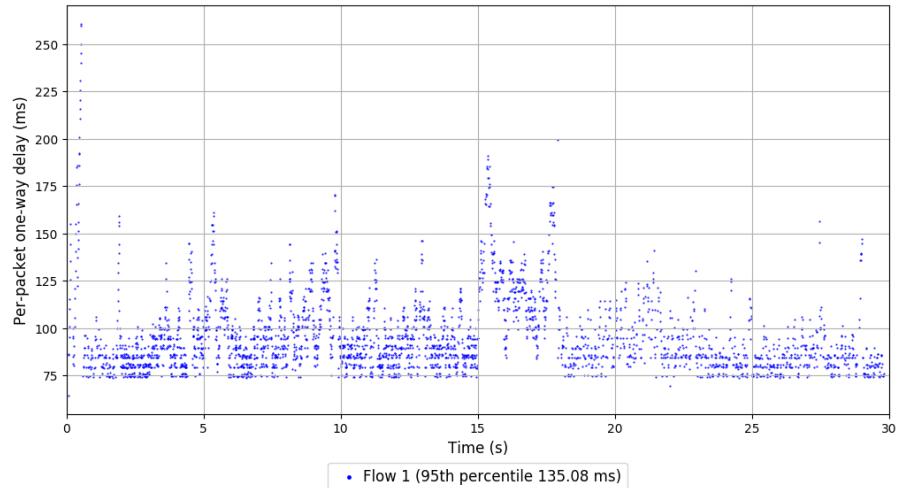
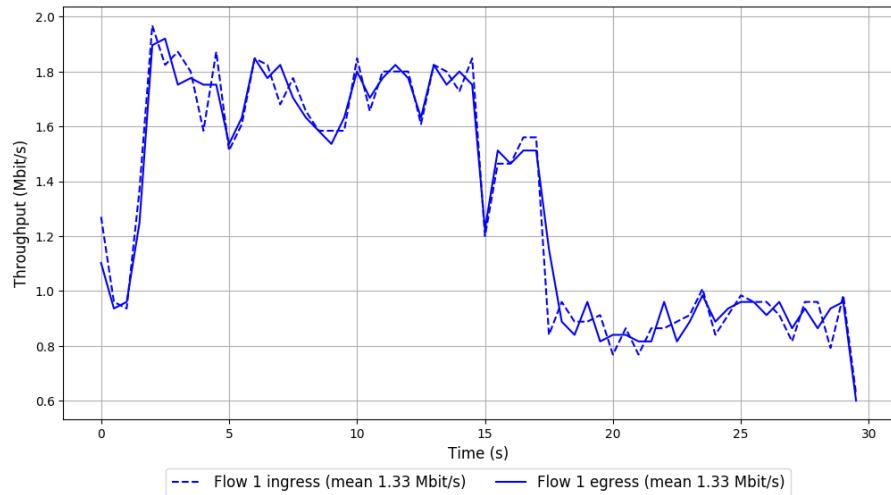


Run 2: Statistics of Indigo

```
Start at: 2017-12-05 06:41:02
End at: 2017-12-05 06:41:32
Local clock offset: 13.207 ms
Remote clock offset: -18.893 ms

# Below is generated by plot.py at 2017-12-05 07:49:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 135.076 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 135.076 ms
Loss rate: 0.18%
```

Run 2: Report of Indigo — Data Link

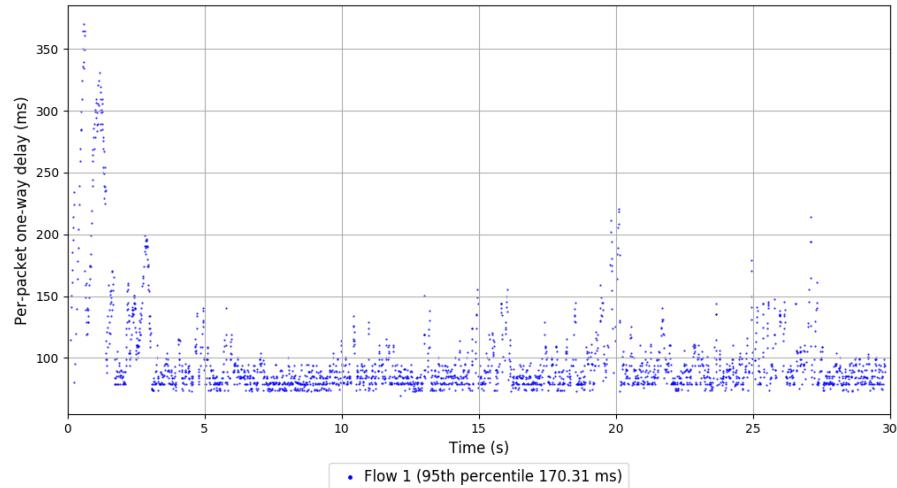
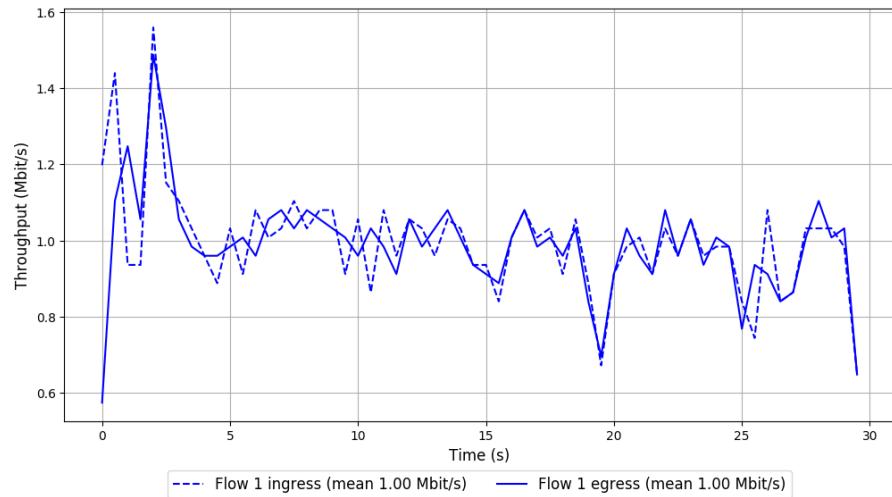


Run 3: Statistics of Indigo

```
Start at: 2017-12-05 06:56:16
End at: 2017-12-05 06:56:46
Local clock offset: 4.591 ms
Remote clock offset: -20.236 ms

# Below is generated by plot.py at 2017-12-05 07:49:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 170.308 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 170.308 ms
Loss rate: 0.76%
```

Run 3: Report of Indigo — Data Link

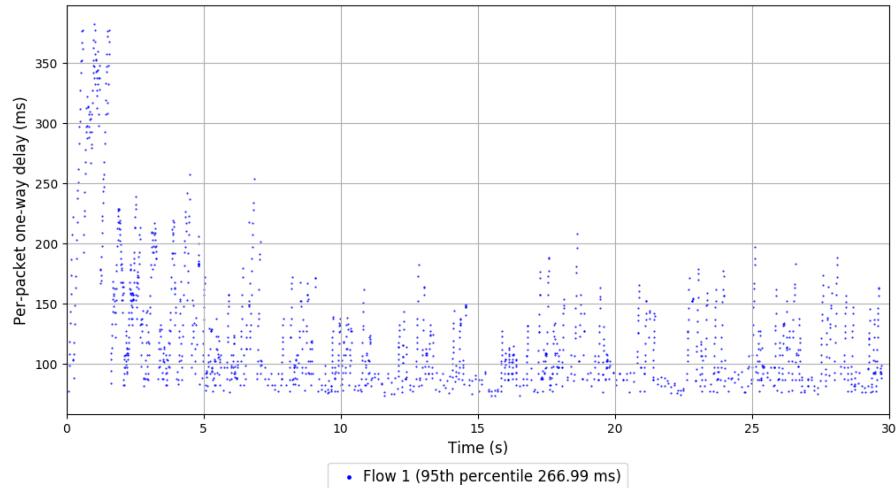
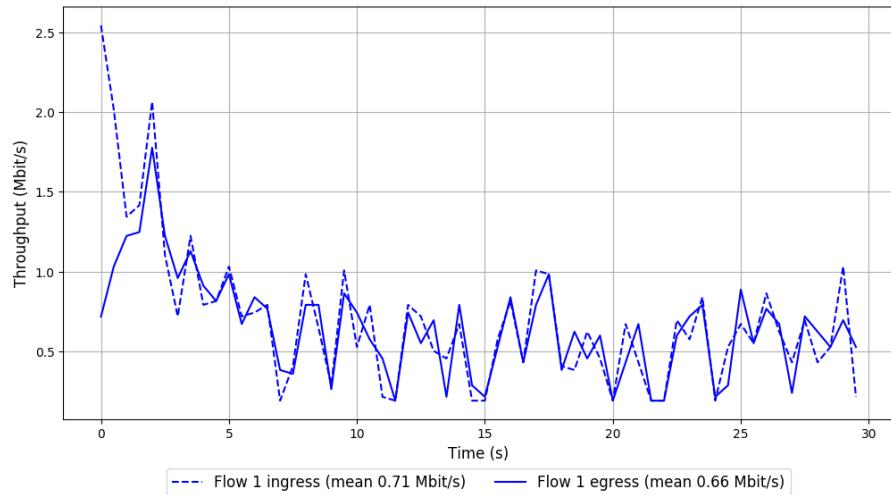


Run 1: Statistics of Indigo-calib

```
Start at: 2017-12-05 06:32:18
End at: 2017-12-05 06:32:48
Local clock offset: 11.617 ms
Remote clock offset: -20.891 ms

# Below is generated by plot.py at 2017-12-05 07:49:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 266.988 ms
Loss rate: 7.03%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 266.988 ms
Loss rate: 7.03%
```

Run 1: Report of Indigo-calib — Data Link

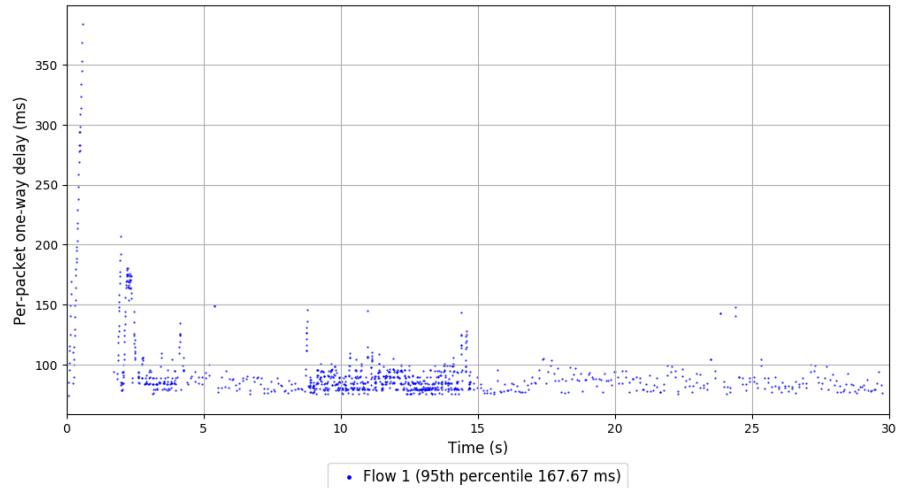
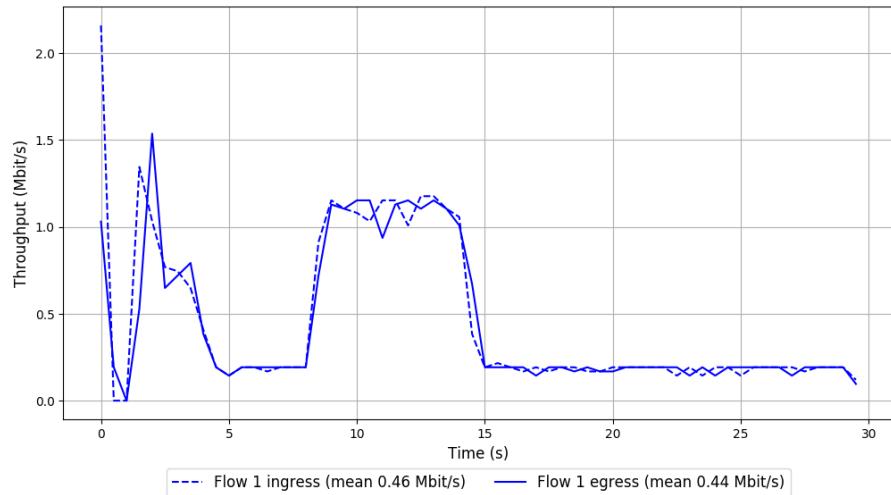


Run 2: Statistics of Indigo-calib

```
Start at: 2017-12-05 06:47:33
End at: 2017-12-05 06:48:03
Local clock offset: 12.051 ms
Remote clock offset: -19.617 ms

# Below is generated by plot.py at 2017-12-05 07:49:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 167.670 ms
Loss rate: 4.63%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 167.670 ms
Loss rate: 4.63%
```

Run 2: Report of Indigo-calib — Data Link



Run 3: Statistics of Indigo-calib

```
Start at: 2017-12-05 07:02:49
End at: 2017-12-05 07:03:19
Local clock offset: 5.501 ms
Remote clock offset: -19.87 ms

# Below is generated by plot.py at 2017-12-05 07:49:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 117.614 ms
Loss rate: 3.48%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 117.614 ms
Loss rate: 3.48%
```

Run 3: Report of Indigo-calib — Data Link

