Pantheon Report

Generated at 2017-12-05 15:54:07 (UTC).

Data path: China Ethernet (*remote*) →AWS Korea Ethernet (*local*).

Repeated the test of 14 congestion control schemes 10 times.

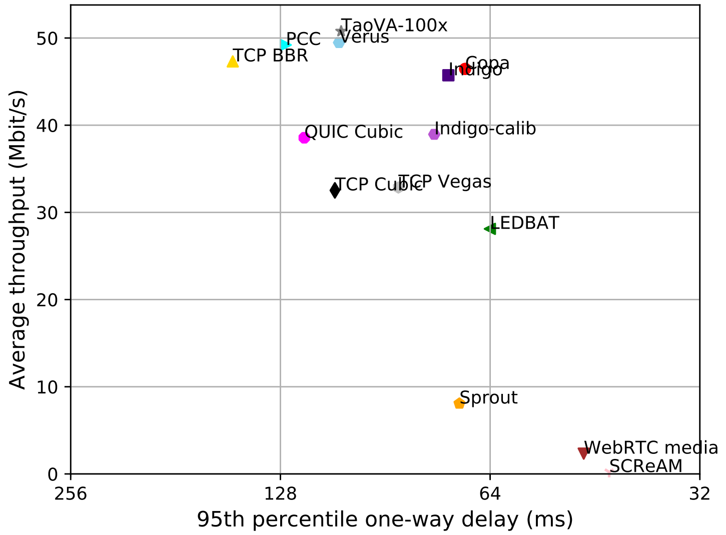
Each test lasted for 30 seconds running 1 flow.

Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

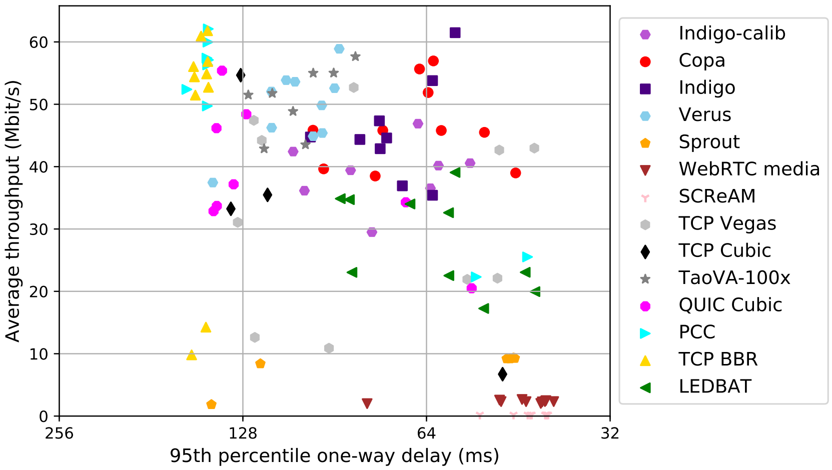
Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

```
Git summary:
branch: indigos @ e3a57ad5ac5cfcaca0e3f983c8dd4cc3509e0262
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 @ 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 China Ethernet to AWS Korea Ethernet, 10 runs of 30s each per scheme
(mean of all runs by scheme)

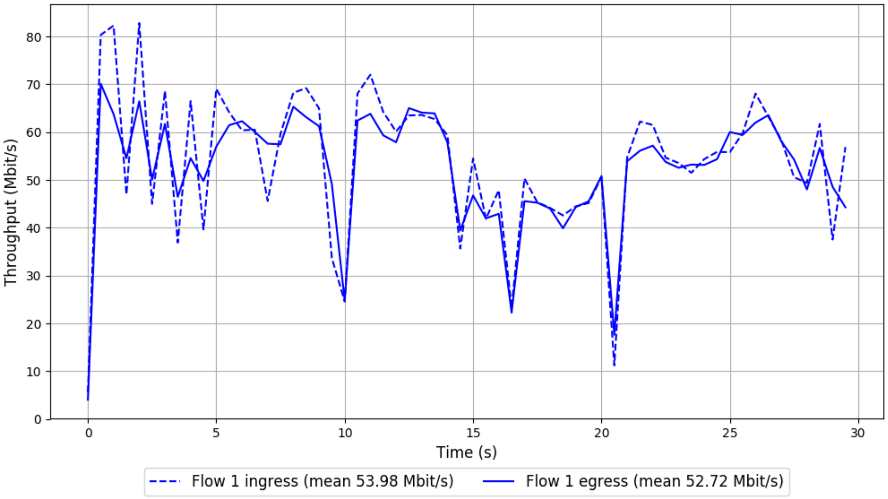


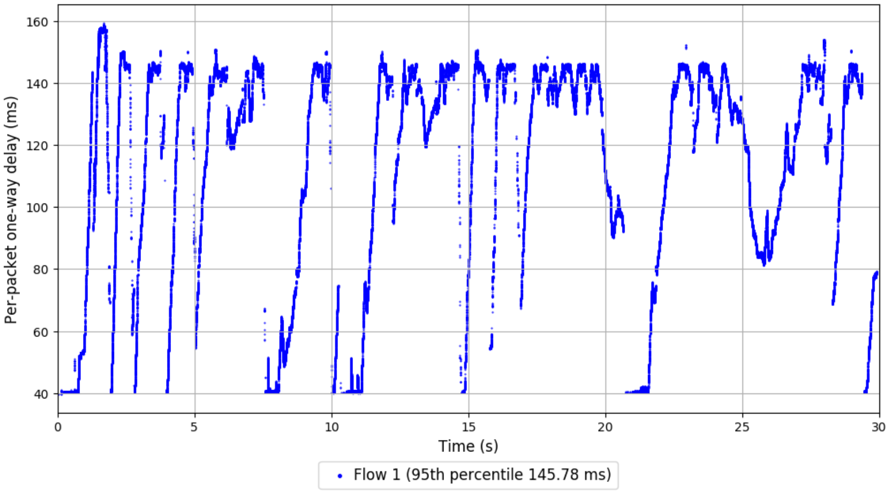
test from China Ethernet to AWS Korea Ethernet, 10 runs of 30s each per scheme

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	10	47.32	149.83	6.20
TCP Cubic	4	32.52	106.90	0.47
LEDBAT	10	28.11	64.06	0.36
PCC	9	49.20	125.75	3.13
QUIC Cubic	8	38.56	118.27	0.64
SCReAM	10	0.22	43.18	0.27
WebRTC media	10	2.33	46.97	0.36
Sprout	7	8.08	70.84	0.76
TaoVA-100x	8	50.77	104.72	1.33
TCP Vegas	10	32.86	86.66	0.49
Verus	10	49.48	105.46	0.65
Copa	10	46.46	69.51	0.38
Indigo	9	45.73	73.47	0.33
Indigo-calib	8	38.95	76.98	0.38

```
Run 1: Statistics of TCP BBR

Start at: 2017-12-05 09:52:37
End at: 2017-12-05 09:53:07
Local clock offset: 0.579 ms
Remote clock offset: -5.895 ms

# Below is generated by plot.py at 2017-12-05 15:44:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.72 Mbit/s
95th percentile per-packet one-way delay: 145.777 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 52.72 Mbit/s
95th percentile per-packet one-way delay: 145.777 ms
Loss rate: 2.61%
```

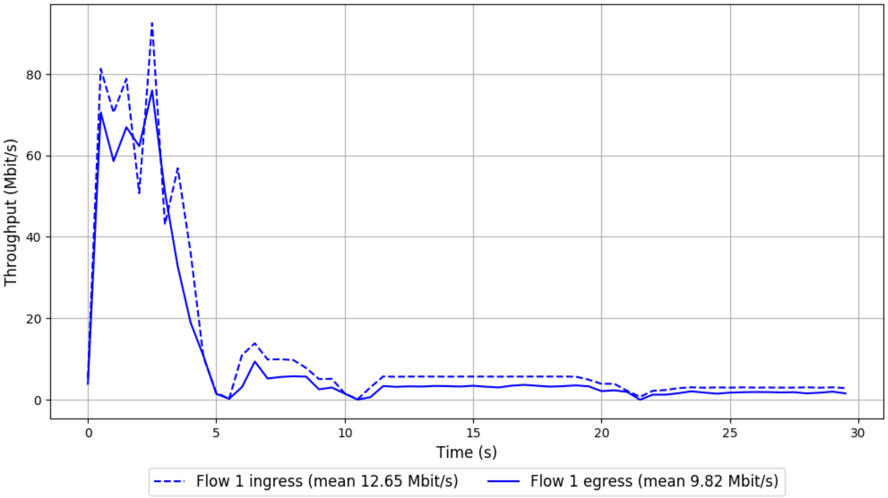
Run 1: Report of TCP BBR — Data Link

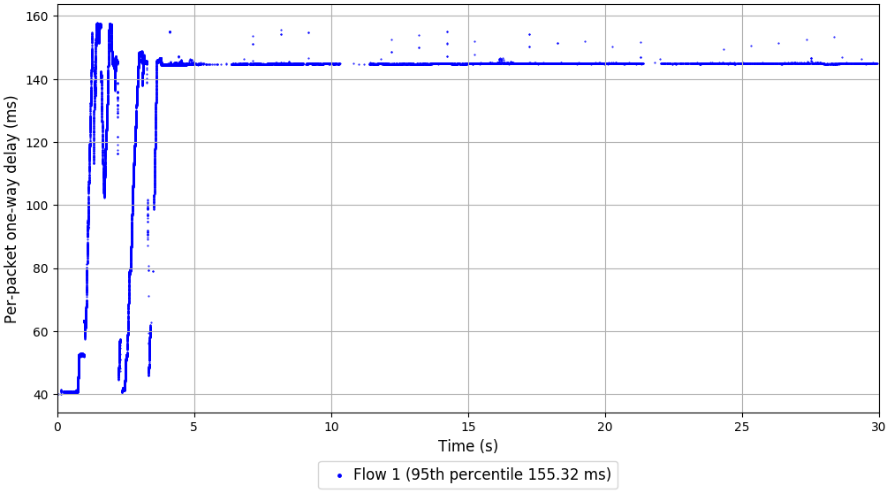




```
Run 2: Statistics of TCP BBR

Start at: 2017-12-05 10:10:51
End at: 2017-12-05 10:11:21
Local clock offset: 0.964 ms
Remote clock offset: -5.835 ms

# Below is generated by plot.py at 2017-12-05 15:44:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.82 Mbit/s
95th percentile per-packet one-way delay: 155.321 ms
Loss rate: 22.63%
-- Flow 1:
Average throughput: 9.82 Mbit/s
95th percentile per-packet one-way delay: 155.321 ms
Loss rate: 22.63%
```

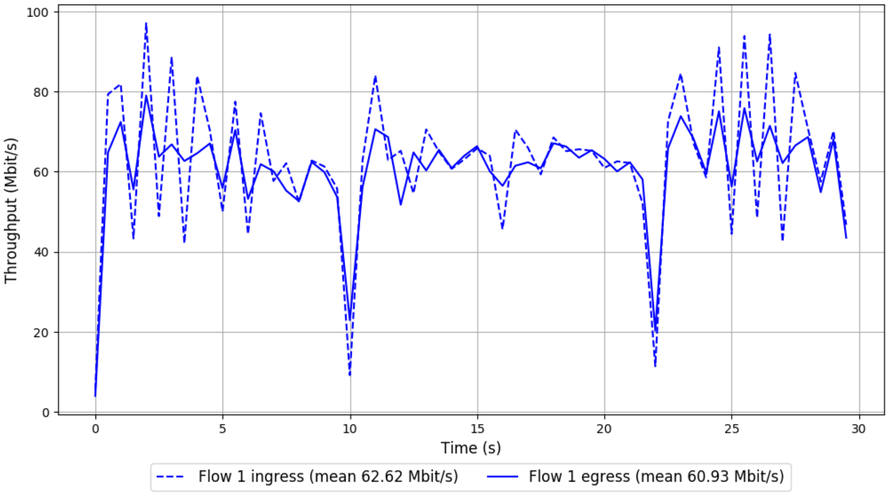
Run 2: Report of TCP BBR — Data Link

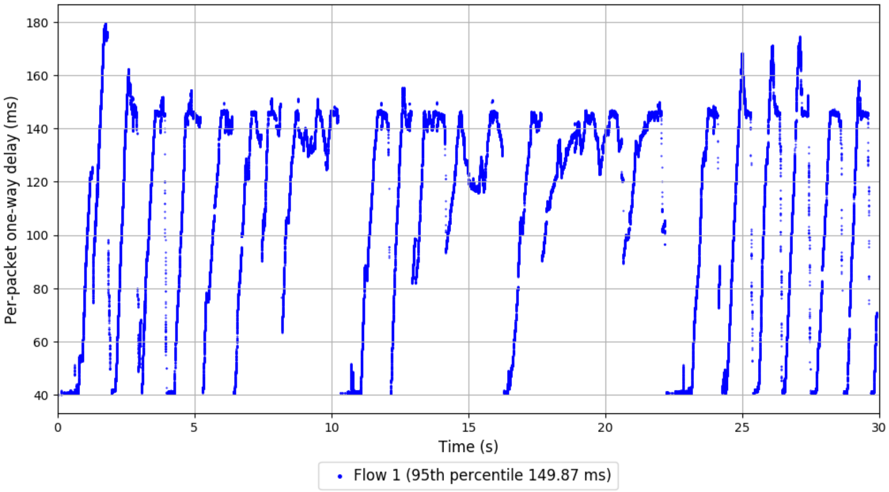




```
Run 3: Statistics of TCP BBR

Start at: 2017-12-05 10:27:40
End at: 2017-12-05 10:28:10
Local clock offset: 0.711 ms
Remote clock offset: -5.943 ms

# Below is generated by plot.py at 2017-12-05 15:44:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.93 Mbit/s
95th percentile per-packet one-way delay: 149.874 ms
Loss rate: 2.98%
-- Flow 1:
Average throughput: 60.93 Mbit/s
95th percentile per-packet one-way delay: 149.874 ms
Loss rate: 2.98%
```

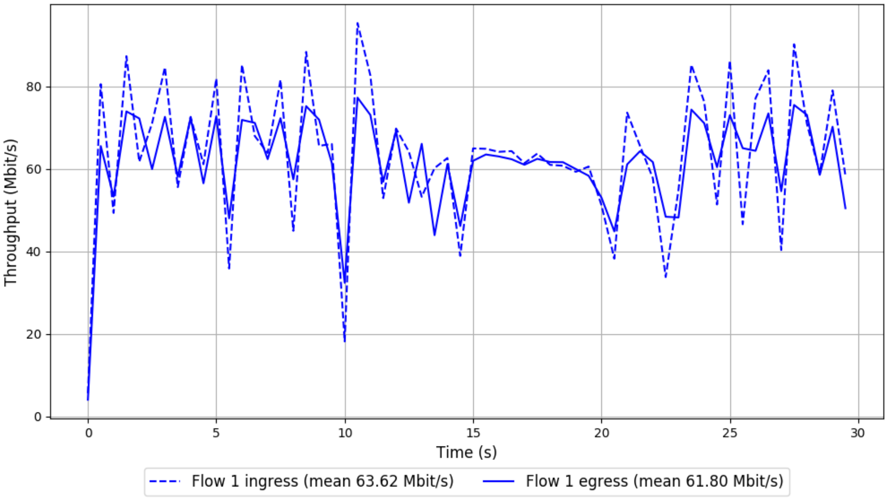
Run 3: Report of TCP BBR — Data Link

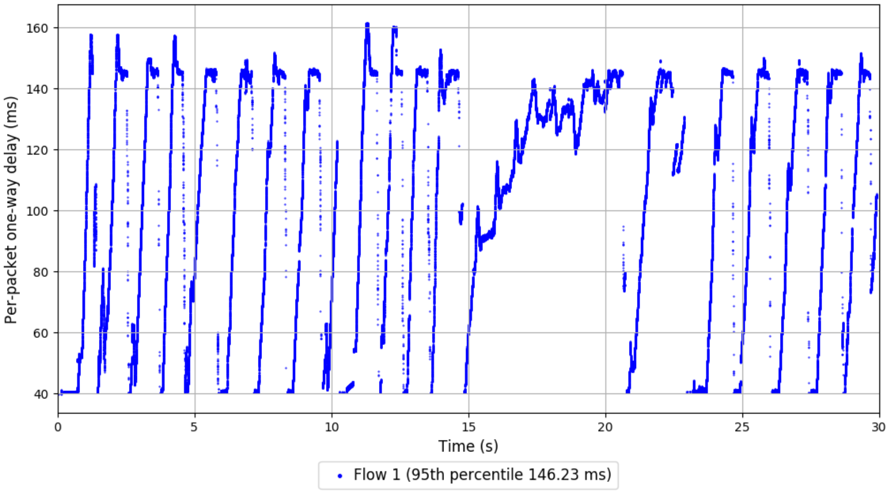




```
Run 4: Statistics of TCP BBR

Start at: 2017-12-05 10:44:08
End at: 2017-12-05 10:44:38
Local clock offset: 0.175 ms
Remote clock offset: -6.608 ms

# Below is generated by plot.py at 2017-12-05 15:44:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.80 Mbit/s
95th percentile per-packet one-way delay: 146.231 ms
Loss rate: 3.17%
-- Flow 1:
Average throughput: 61.80 Mbit/s
95th percentile per-packet one-way delay: 146.231 ms
Loss rate: 3.17%
```

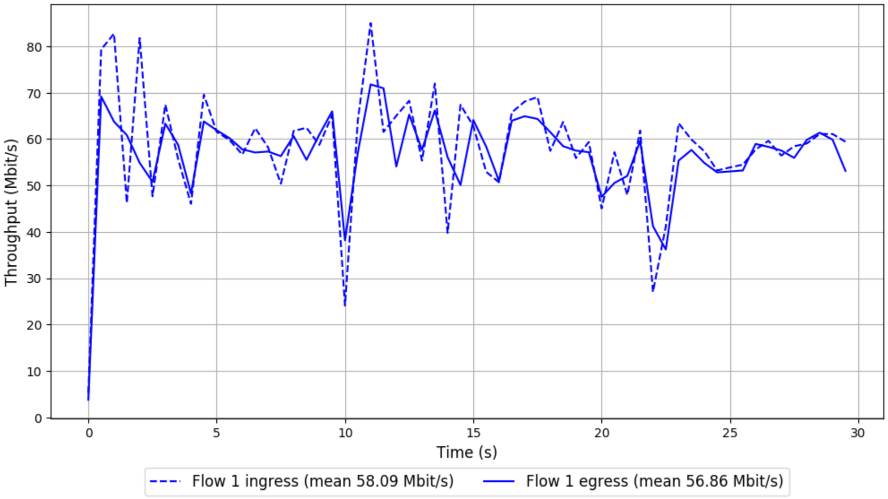
Run 4: Report of TCP BBR — Data Link

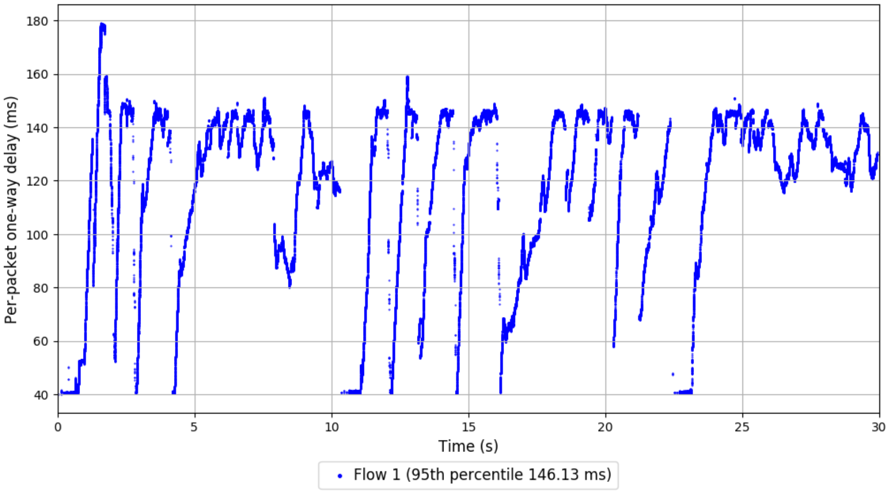




```
Run 5: Statistics of TCP BBR

Start at: 2017-12-05 11:00:38
End at: 2017-12-05 11:01:08
Local clock offset: -0.276 ms
Remote clock offset: -7.519 ms

# Below is generated by plot.py at 2017-12-05 15:44:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.86 Mbit/s
95th percentile per-packet one-way delay: 146.129 ms
Loss rate: 2.40%
-- Flow 1:
Average throughput: 56.86 Mbit/s
95th percentile per-packet one-way delay: 146.129 ms
Loss rate: 2.40%
```

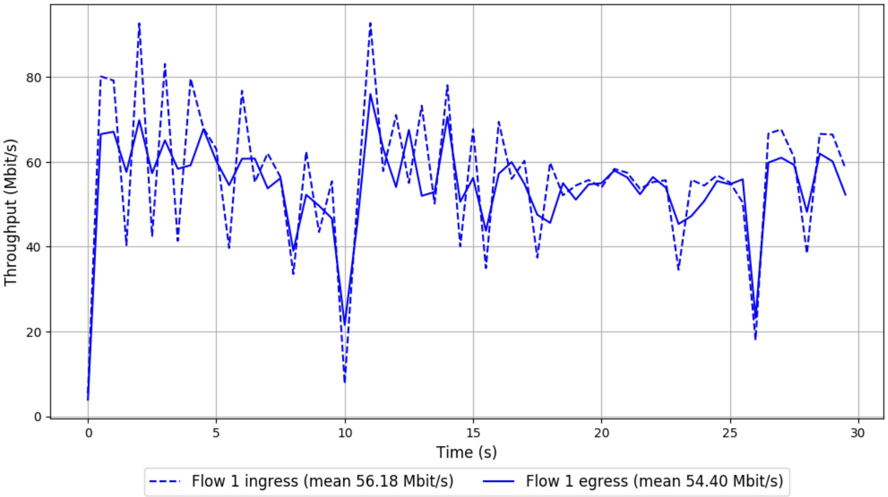
Run 5: Report of TCP BBR — Data Link

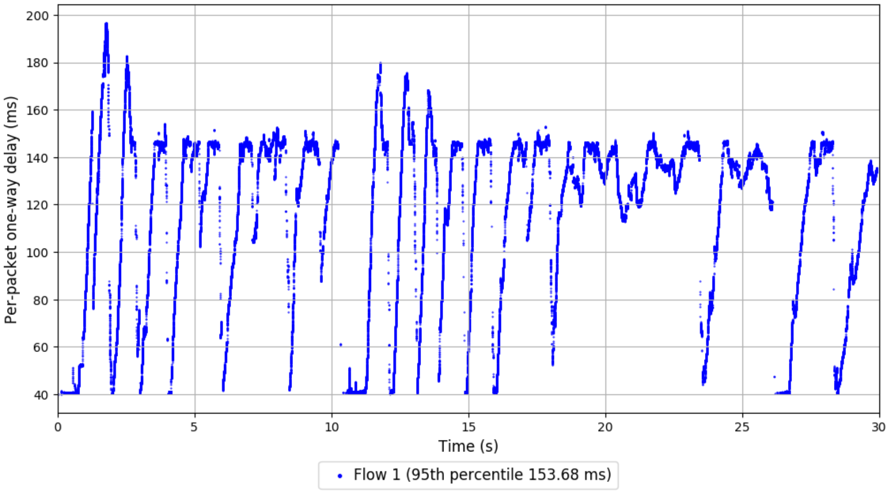




```
Run 6: Statistics of TCP BBR

Start at: 2017-12-05 11:17:05
End at: 2017-12-05 11:17:35
Local clock offset: -0.299 ms
Remote clock offset: -7.438 ms

# Below is generated by plot.py at 2017-12-05 15:44:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.40 Mbit/s
95th percentile per-packet one-way delay: 153.681 ms
Loss rate: 3.46%
-- Flow 1:
Average throughput: 54.40 Mbit/s
95th percentile per-packet one-way delay: 153.681 ms
Loss rate: 3.46%
```

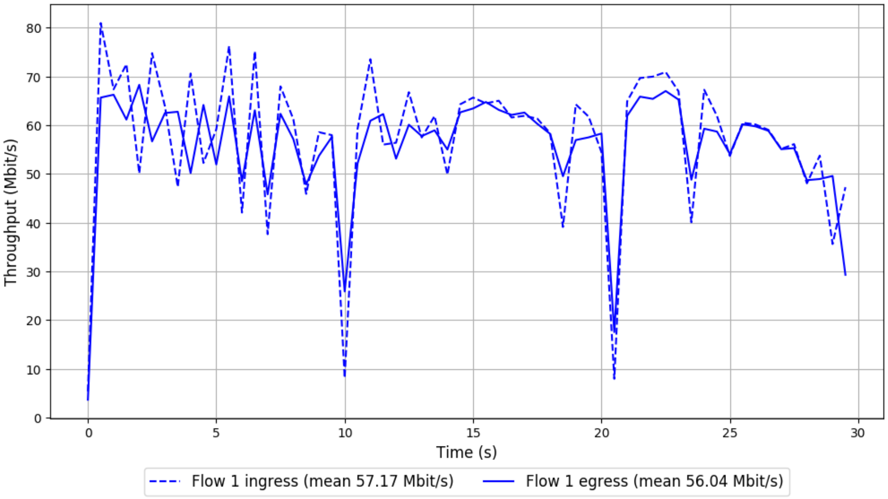
Run 6: Report of TCP BBR — Data Link

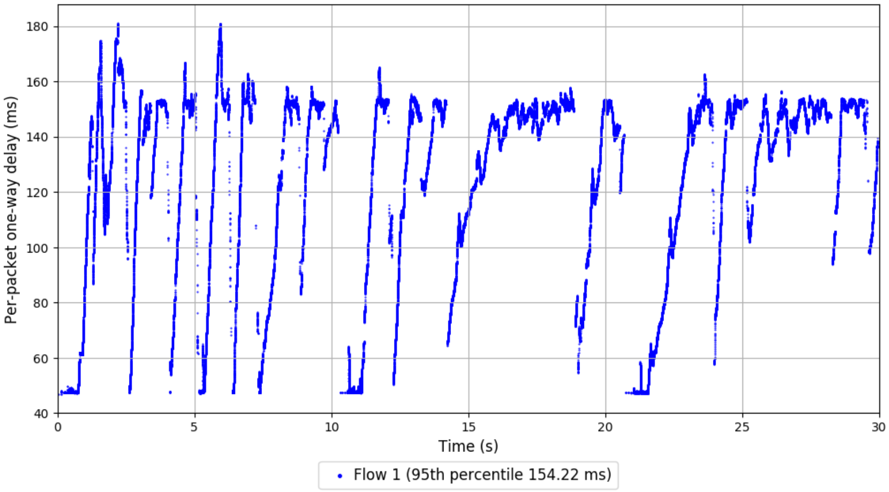




```
Run 7: Statistics of TCP BBR

Start at: 2017-12-05 11:33:28
End at: 2017-12-05 11:33:58
Local clock offset: -0.201 ms
Remote clock offset: -14.328 ms

# Below is generated by plot.py at 2017-12-05 15:44:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.04 Mbit/s
95th percentile per-packet one-way delay: 154.217 ms
Loss rate: 2.25%
-- Flow 1:
Average throughput: 56.04 Mbit/s
95th percentile per-packet one-way delay: 154.217 ms
Loss rate: 2.25%
```

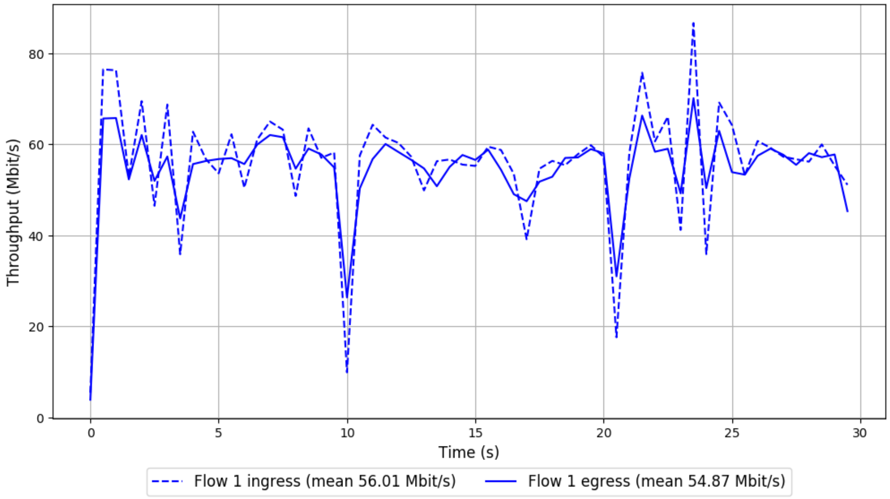
Run 7: Report of TCP BBR — Data Link

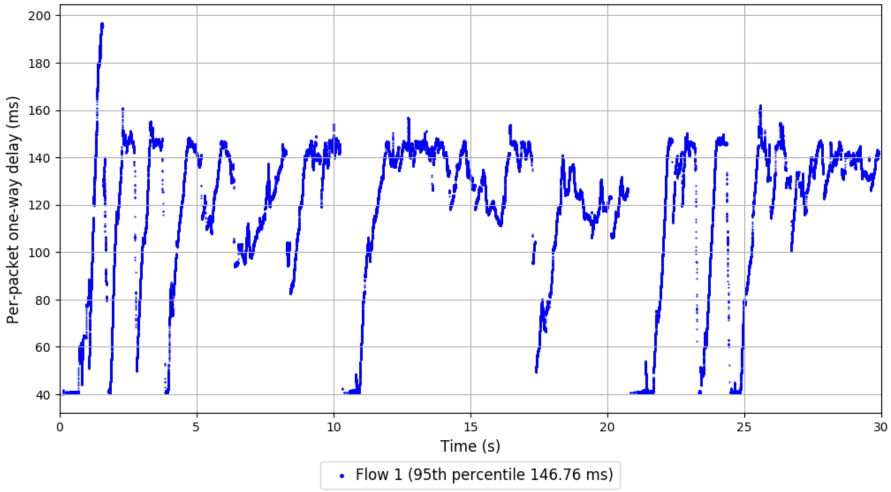




```
Run 8: Statistics of TCP BBR

Start at: 2017-12-05 11:50:42
End at: 2017-12-05 11:51:12
Local clock offset: -0.441 ms
Remote clock offset: -8.499 ms

# Below is generated by plot.py at 2017-12-05 15:44:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.87 Mbit/s
95th percentile per-packet one-way delay: 146.760 ms
Loss rate: 2.32%
-- Flow 1:
Average throughput: 54.87 Mbit/s
95th percentile per-packet one-way delay: 146.760 ms
Loss rate: 2.32%
```

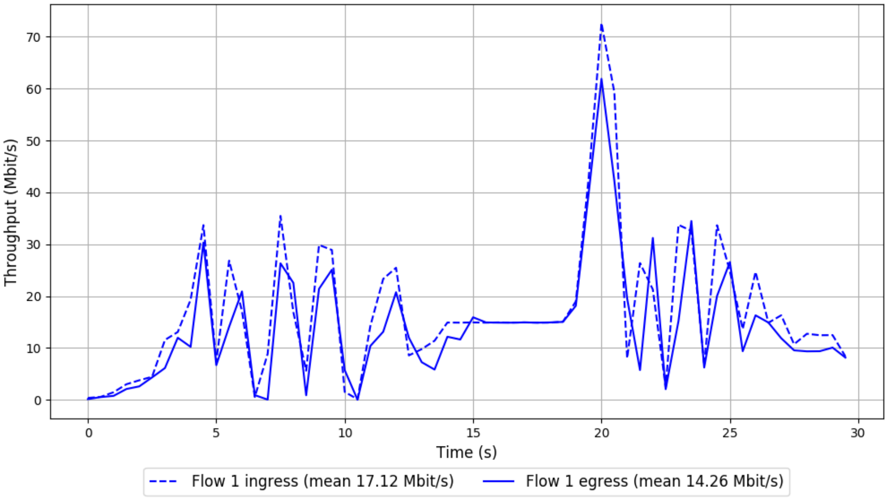
Run 8: Report of TCP BBR — Data Link

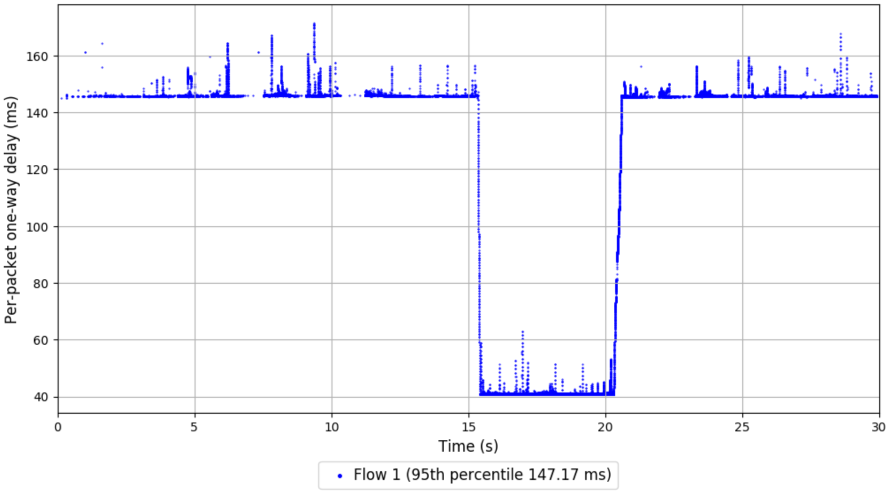




```
Run 9: Statistics of TCP BBR

Start at: 2017-12-05 12:08:30
End at: 2017-12-05 12:09:00
Local clock offset: 0.056 ms
Remote clock offset: -8.064 ms

# Below is generated by plot.py at 2017-12-05 15:44:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.26 Mbit/s
95th percentile per-packet one-way delay: 147.172 ms
Loss rate: 16.85%
-- Flow 1:
Average throughput: 14.26 Mbit/s
95th percentile per-packet one-way delay: 147.172 ms
Loss rate: 16.85%
```

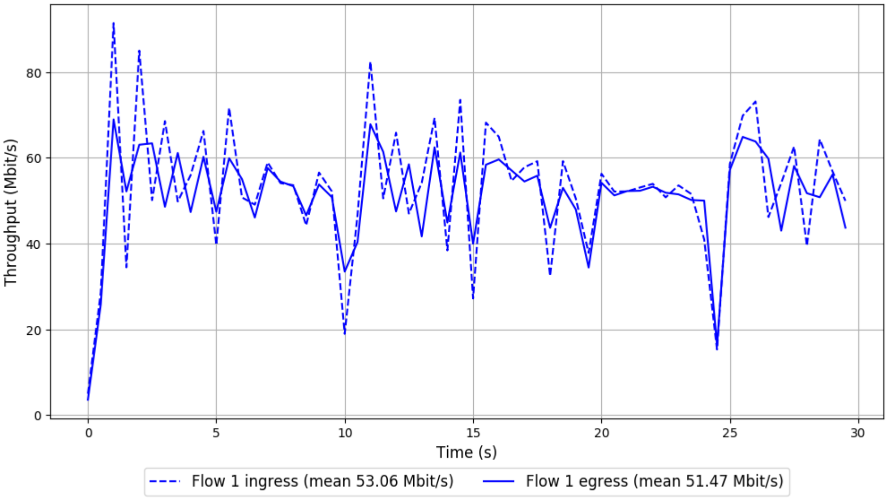
Run 9: Report of TCP BBR — Data Link

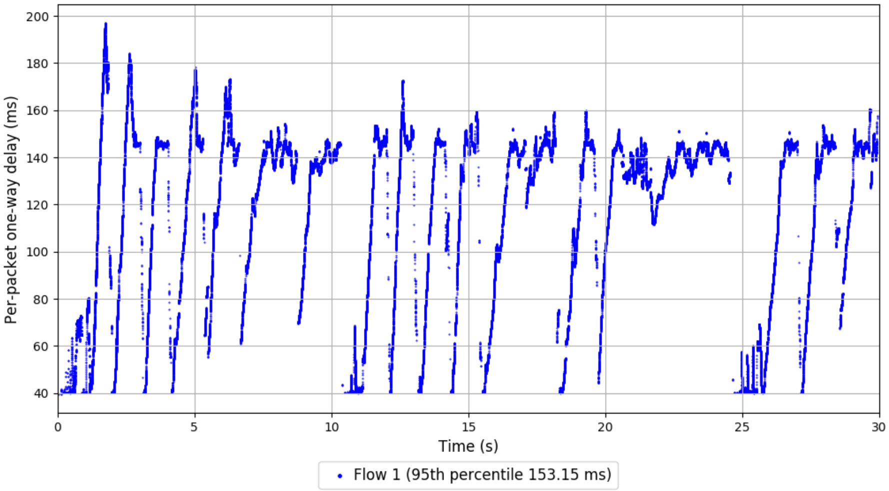




```
Run 10: Statistics of TCP BBR

Start at: 2017-12-05 12:25:30
End at: 2017-12-05 12:26:00
Local clock offset: 0.396 ms
Remote clock offset: -7.486 ms

# Below is generated by plot.py at 2017-12-05 15:44:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.47 Mbit/s
95th percentile per-packet one-way delay: 153.145 ms
Loss rate: 3.28%
-- Flow 1:
Average throughput: 51.47 Mbit/s
95th percentile per-packet one-way delay: 153.145 ms
Loss rate: 3.28%
```

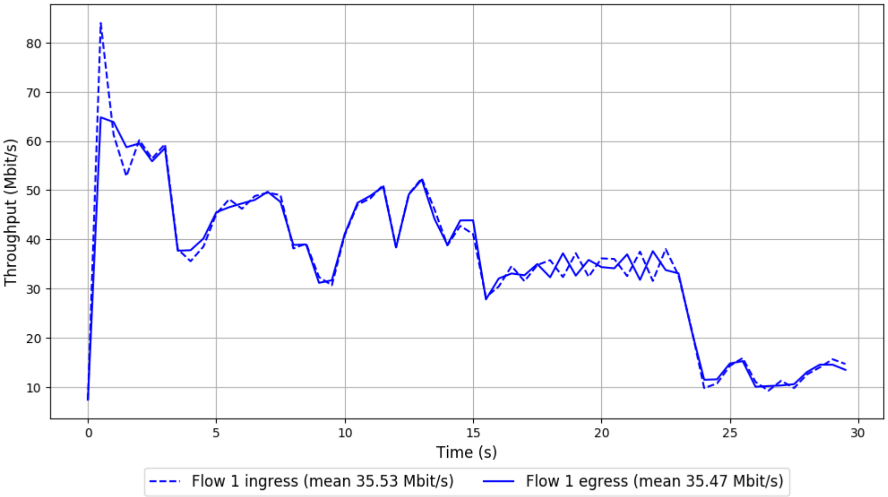
Run 10: Report of TCP BBR — Data Link

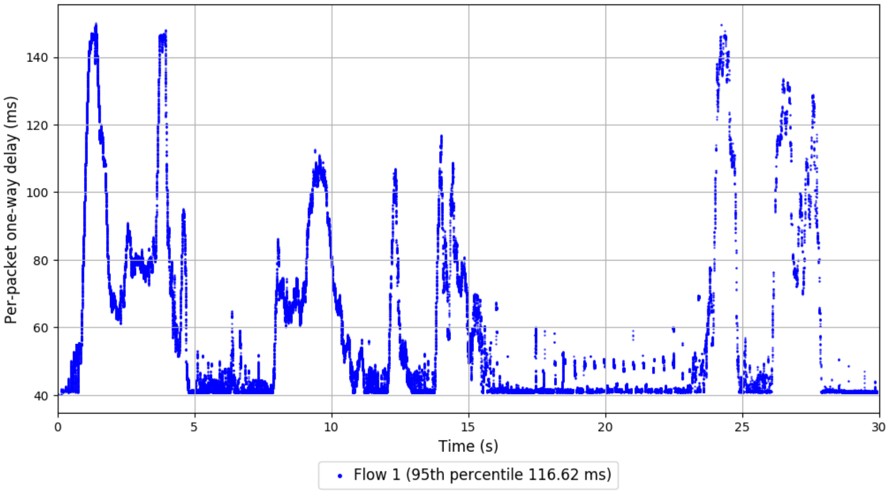




```
Run 1: Statistics of TCP Cubic

Start at: 2017-12-05 09:50:14
End at: 2017-12-05 09:50:44
Local clock offset: 0.445 ms
Remote clock offset: -5.886 ms

# Below is generated by plot.py at 2017-12-05 15:45:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 35.47 Mbit/s
95th percentile per-packet one-way delay: 116.619 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 35.47 Mbit/s
95th percentile per-packet one-way delay: 116.619 ms
Loss rate: 0.44%
```

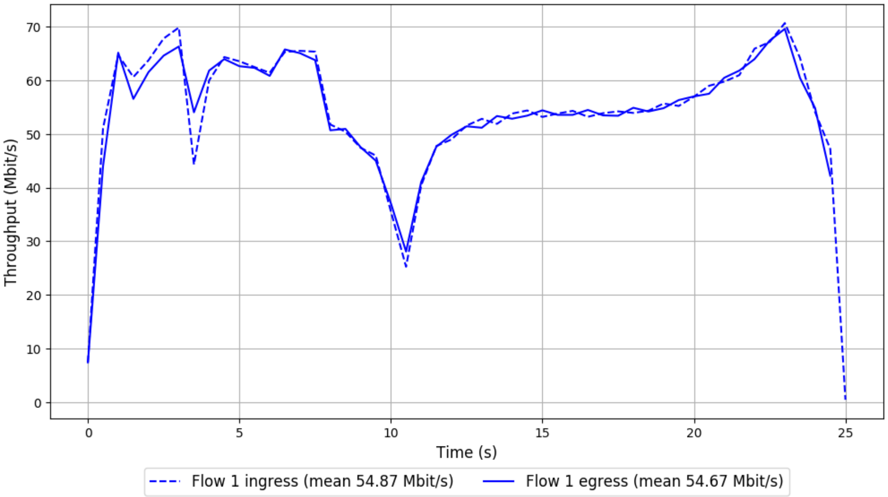
Run 1: Report of TCP Cubic — Data Link

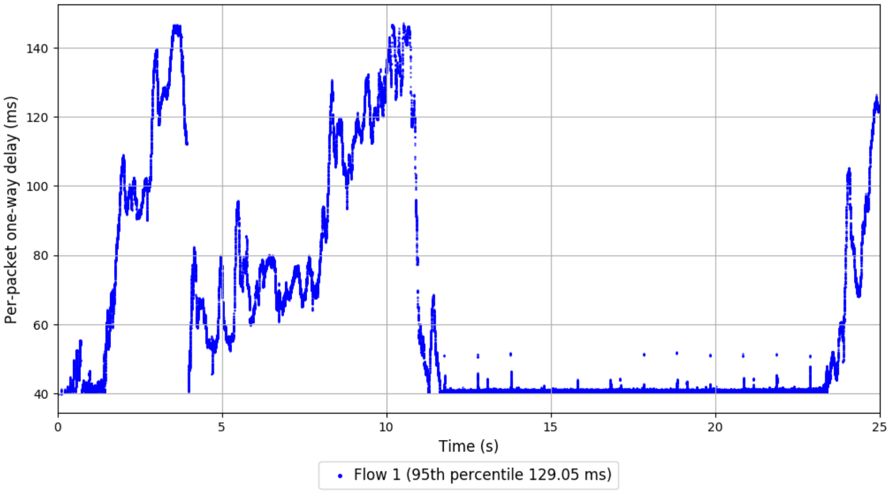




```
Run 2: Statistics of TCP Cubic

Start at: 2017-12-05 10:08:28
End at: 2017-12-05 10:08:58
Local clock offset: 1.016 ms
Remote clock offset: -5.874 ms

# Below is generated by plot.py at 2017-12-05 15:45:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.67 Mbit/s
95th percentile per-packet one-way delay: 129.048 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 54.67 Mbit/s
95th percentile per-packet one-way delay: 129.048 ms
Loss rate: 0.70%
```

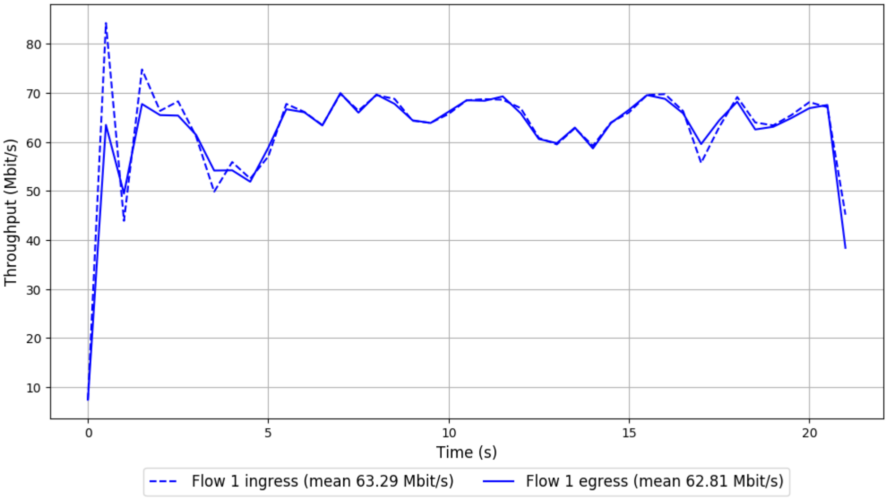
Run 2: Report of TCP Cubic — Data Link

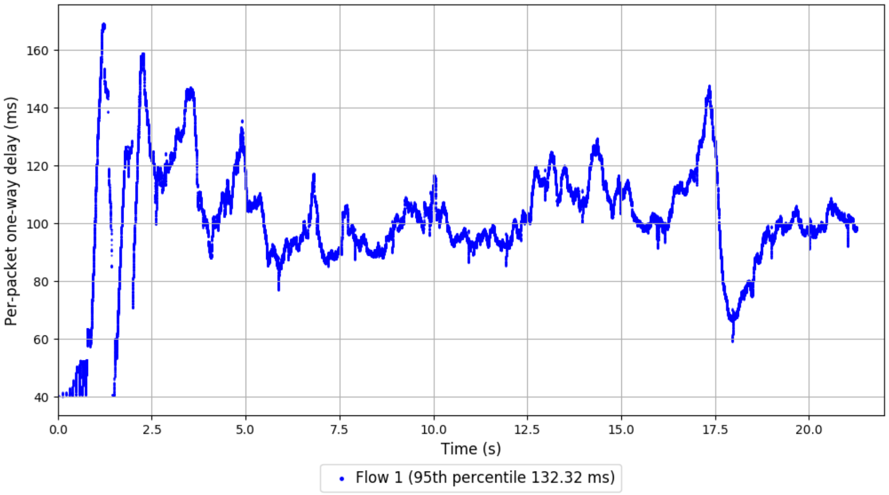




```
Run 3: Statistics of TCP Cubic

Start at: 2017-12-05 10:25:17
End at: 2017-12-05 10:25:47
Local clock offset: 0.702 ms
Remote clock offset: -5.873 ms
```

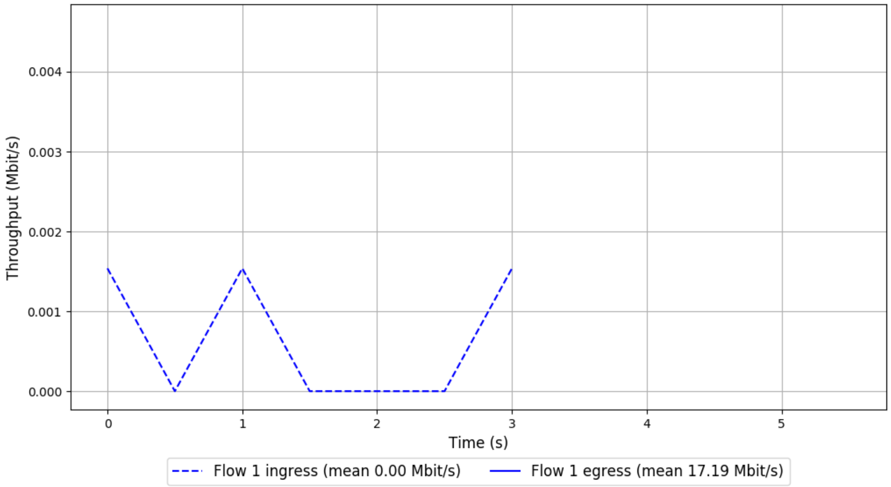
Run 3: Report of TCP Cubic — Data Link

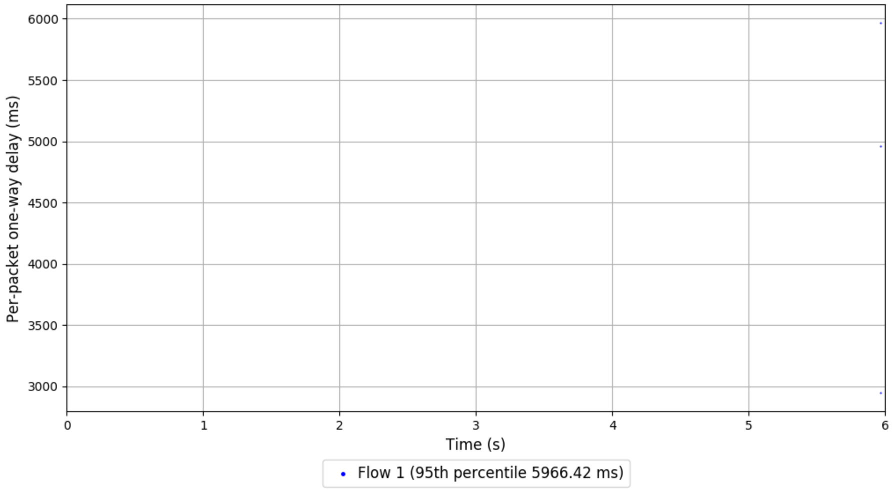




```
Run 4: Statistics of TCP Cubic

Start at: 2017-12-05 10:41:48
End at: 2017-12-05 10:42:18
Local clock offset: 0.401 ms
Remote clock offset: -6.433 ms
```

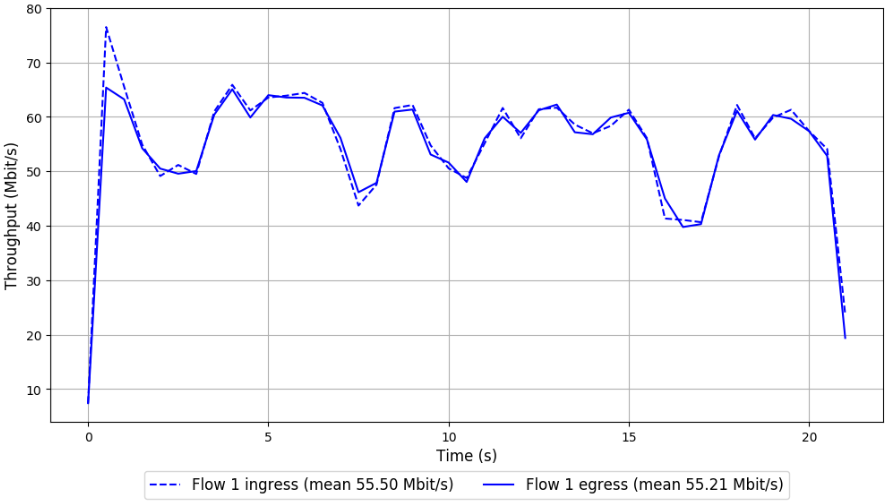
Run 4: Report of TCP Cubic — Data Link

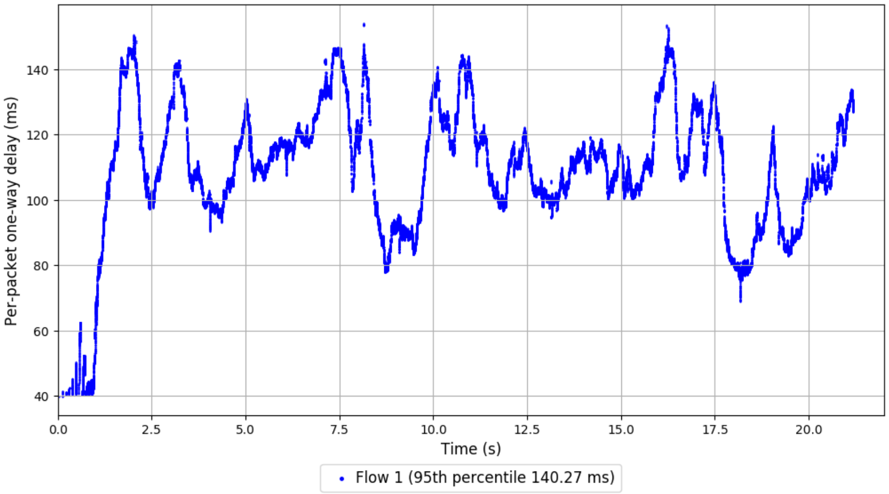




```
Run 5: Statistics of TCP Cubic

Start at: 2017-12-05 10:58:15
End at: 2017-12-05 10:58:45
Local clock offset: -0.223 ms
Remote clock offset: -7.432 ms
```

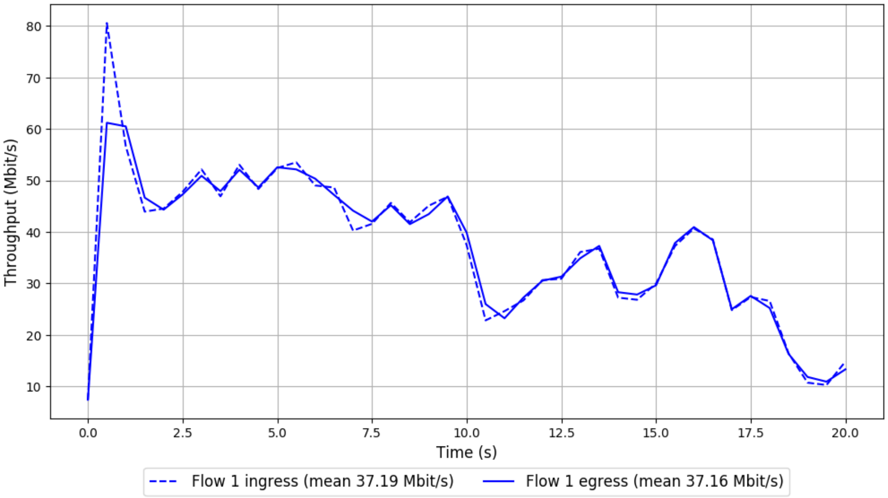
Run 5: Report of TCP Cubic — Data Link

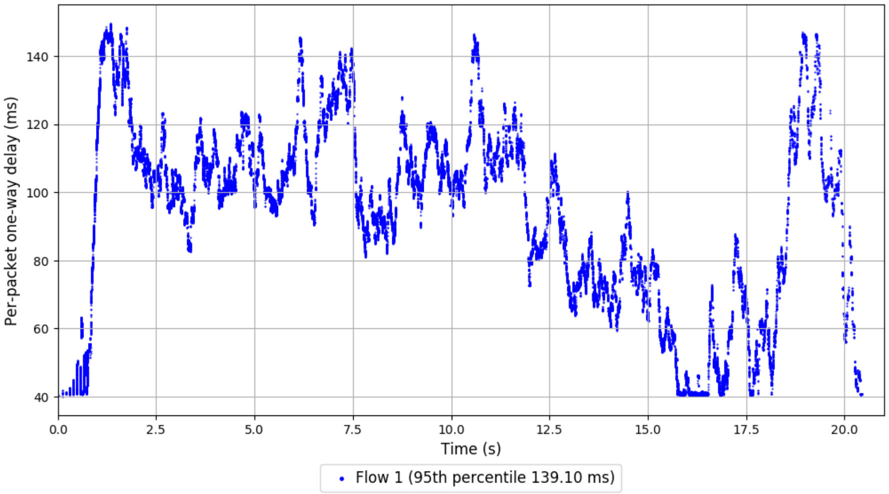




```
Run 6: Statistics of TCP Cubic

Start at: 2017-12-05 11:14:43
End at: 2017-12-05 11:15:13
Local clock offset: -0.302 ms
Remote clock offset: -7.472 ms
```

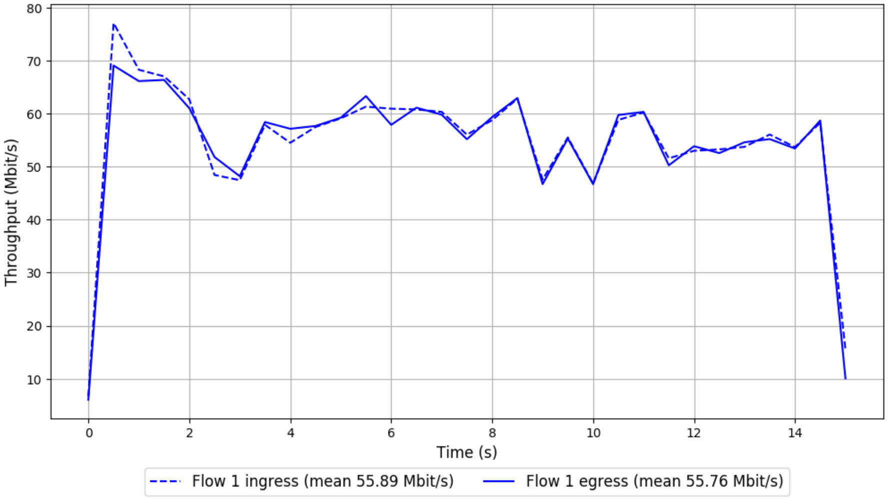
Run 6: Report of TCP Cubic — Data Link

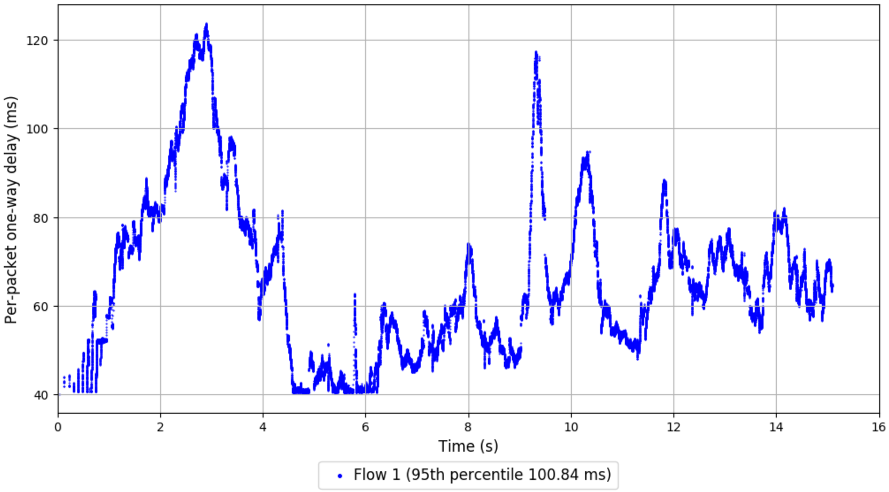




```
Run 7: Statistics of TCP Cubic

Start at: 2017-12-05 11:31:07
End at: 2017-12-05 11:31:37
Local clock offset: -0.208 ms
Remote clock offset: -7.419 ms
```

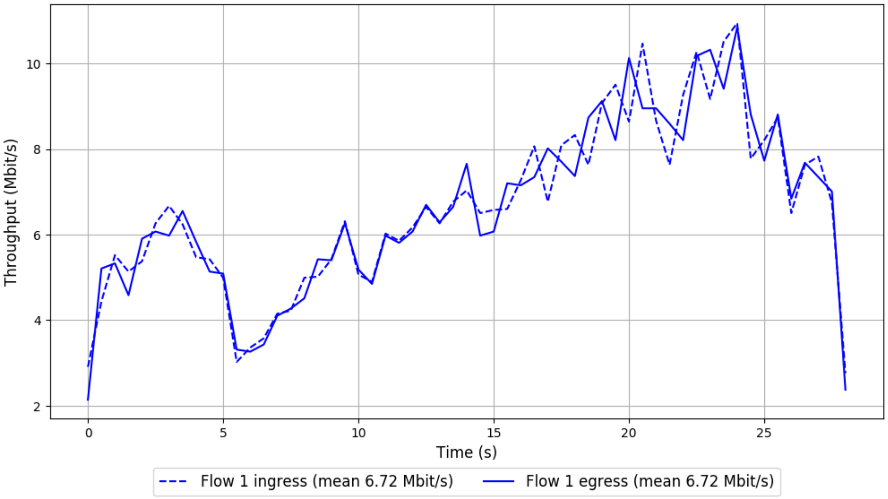
Run 7: Report of TCP Cubic — Data Link

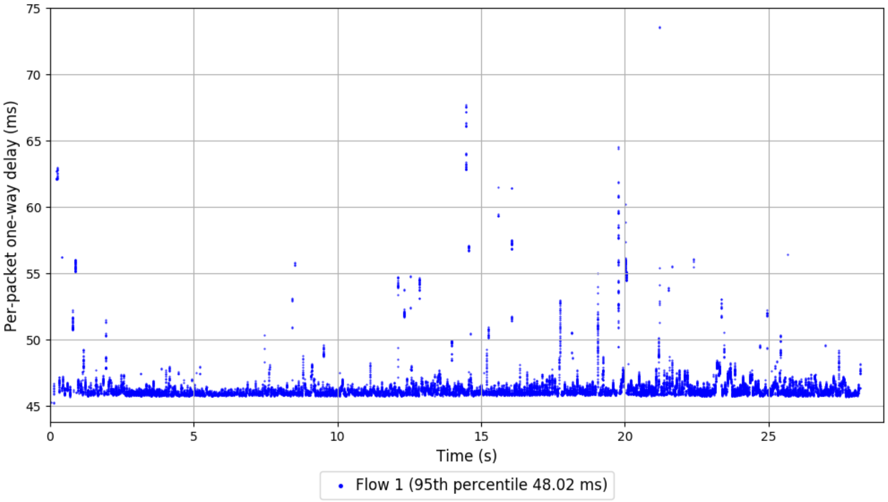




```
Run 8: Statistics of TCP Cubic

Start at: 2017-12-05 11:48:18
End at: 2017-12-05 11:48:48
Local clock offset: -0.318 ms
Remote clock offset: -13.315 ms

# Below is generated by plot.py at 2017-12-05 15:45:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.72 Mbit/s
95th percentile per-packet one-way delay: 48.021 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 6.72 Mbit/s
95th percentile per-packet one-way delay: 48.021 ms
Loss rate: 0.35%
```

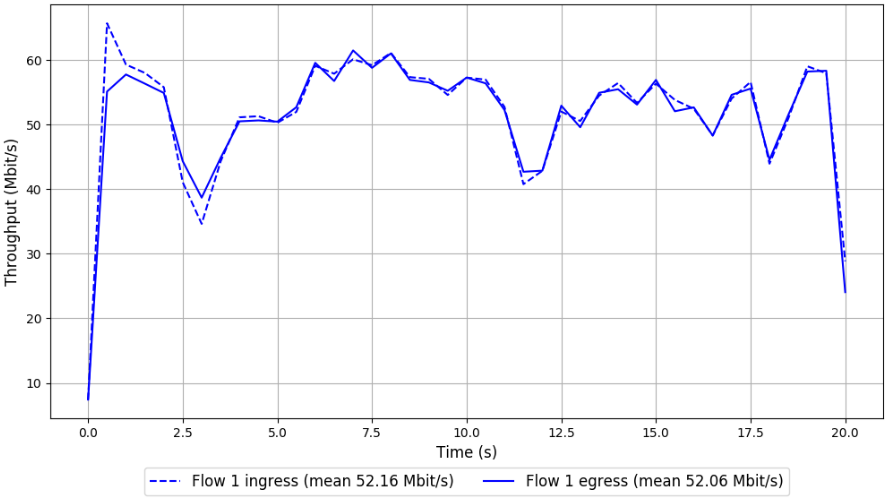
Run 8: Report of TCP Cubic — Data Link

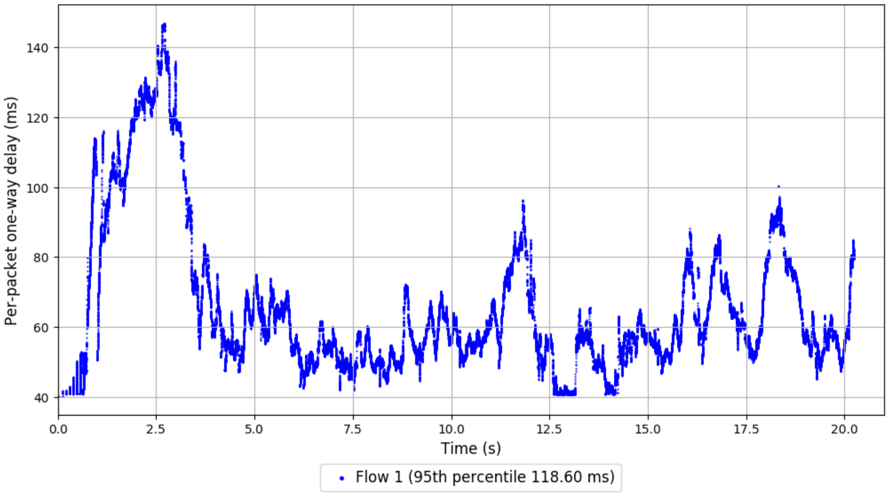




```
Run 9: Statistics of TCP Cubic

Start at: 2017-12-05 12:06:05
End at: 2017-12-05 12:06:35
Local clock offset: 0.142 ms
Remote clock offset: -8.207 ms
```

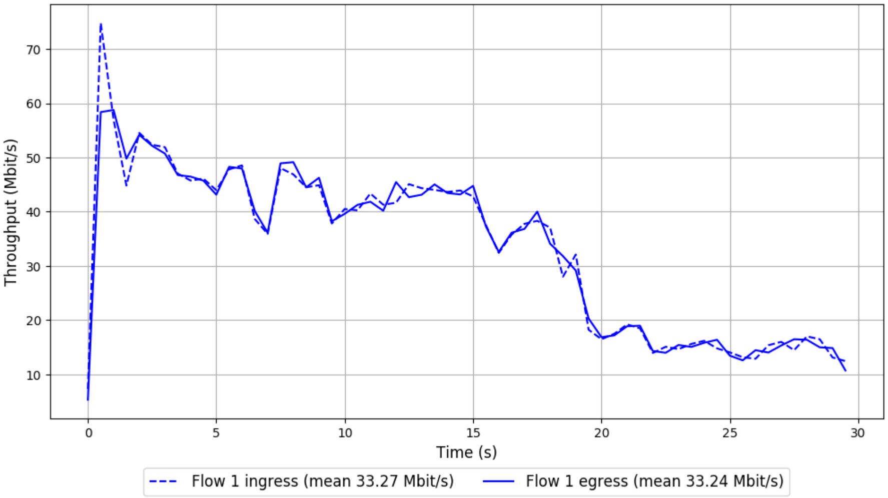
Run 9: Report of TCP Cubic — Data Link

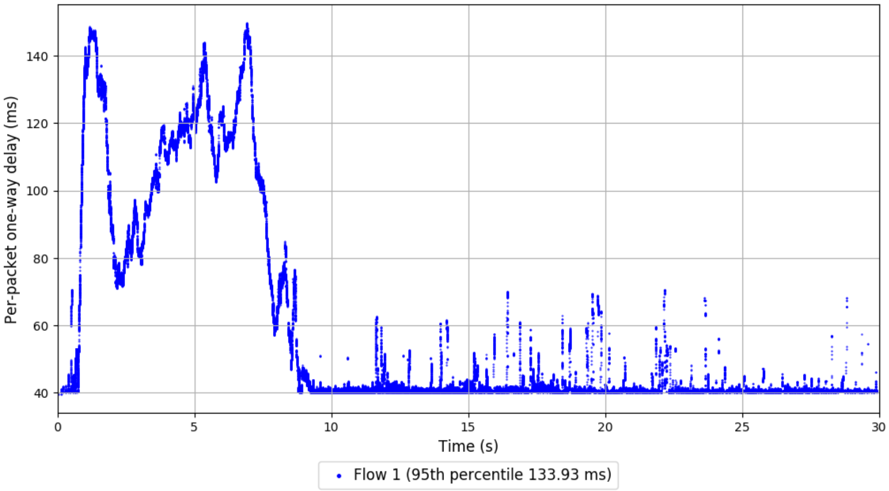




```
Run 10: Statistics of TCP Cubic

Start at: 2017-12-05 12:23:06
End at: 2017-12-05 12:23:36
Local clock offset: 0.317 ms
Remote clock offset: -7.303 ms

# Below is generated by plot.py at 2017-12-05 15:45:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 33.24 Mbit/s
95th percentile per-packet one-way delay: 133.928 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 33.24 Mbit/s
95th percentile per-packet one-way delay: 133.928 ms
Loss rate: 0.39%
```

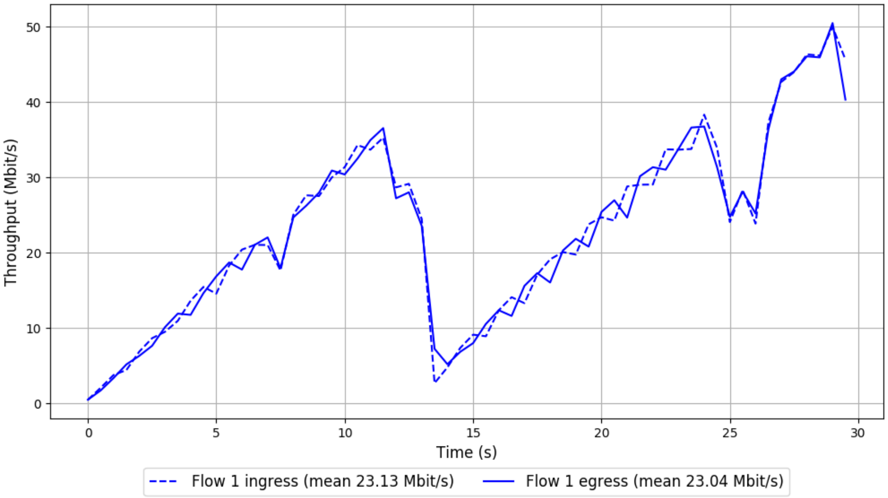
Run 10: Report of TCP Cubic — Data Link

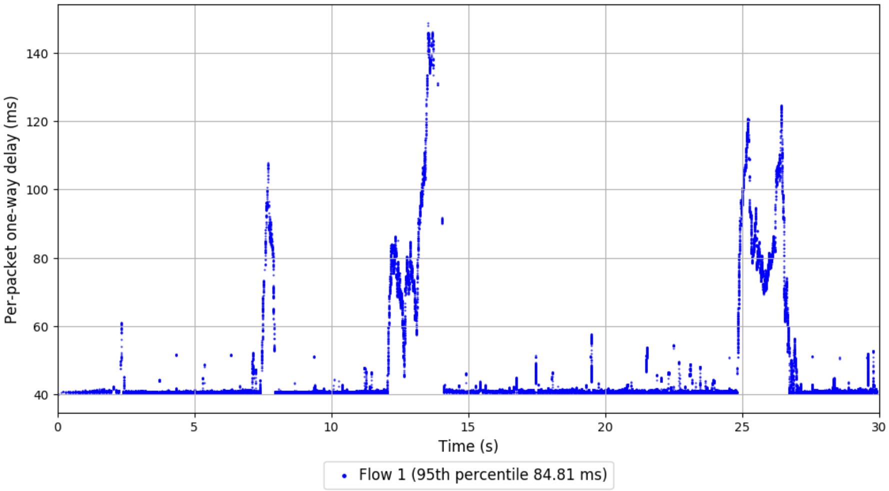




```
Run 1: Statistics of LEDBAT

Start at: 2017-12-05 09:47:45
End at: 2017-12-05 09:48:15
Local clock offset: 0.306 ms
Remote clock offset: -5.86 ms

# Below is generated by plot.py at 2017-12-05 15:45:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.04 Mbit/s
95th percentile per-packet one-way delay: 84.808 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 23.04 Mbit/s
95th percentile per-packet one-way delay: 84.808 ms
Loss rate: 0.67%
```

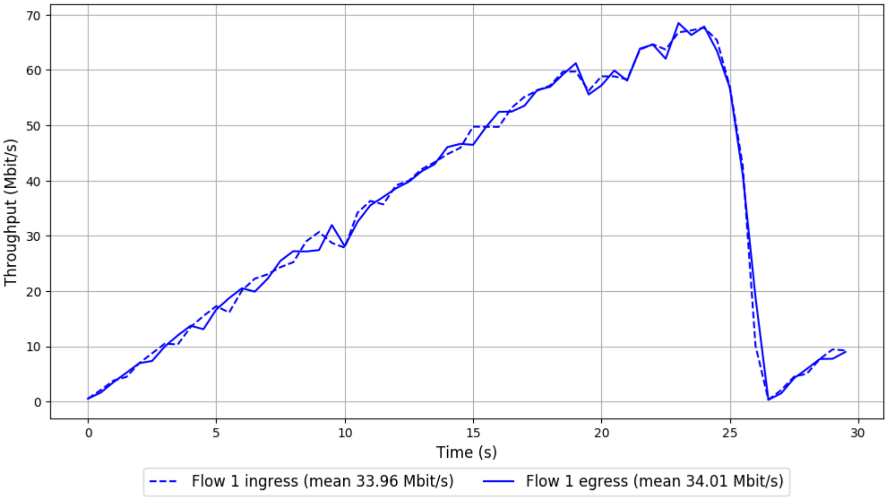
Run 1: Report of LEDBAT — Data Link

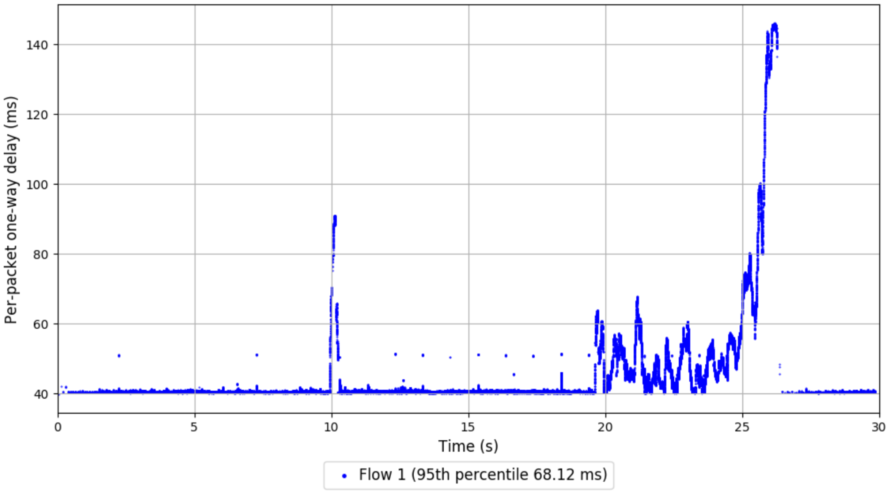




```
Run 2: Statistics of LEDBAT

Start at: 2017-12-05 10:06:04
End at: 2017-12-05 10:06:34
Local clock offset: 0.84 ms
Remote clock offset: -5.867 ms

# Below is generated by plot.py at 2017-12-05 15:45:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.01 Mbit/s
95th percentile per-packet one-way delay: 68.117 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 34.01 Mbit/s
95th percentile per-packet one-way delay: 68.117 ms
Loss rate: 0.15%
```

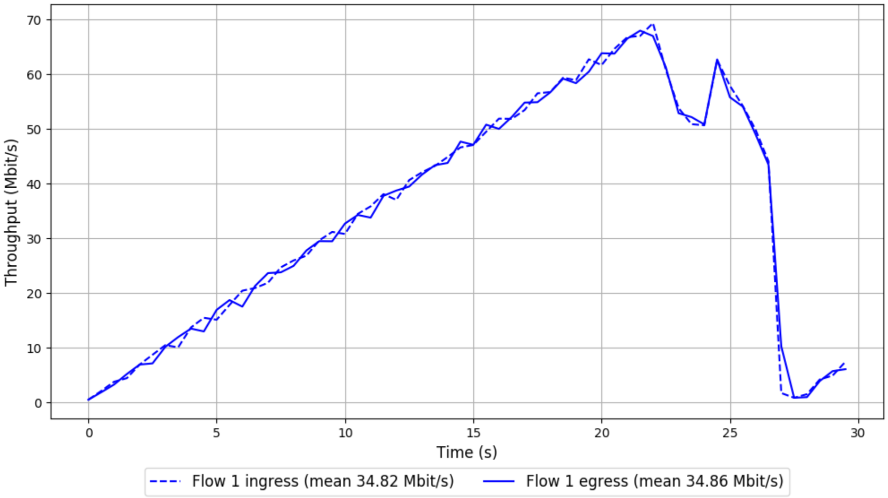
Run 2: Report of LEDBAT — Data Link

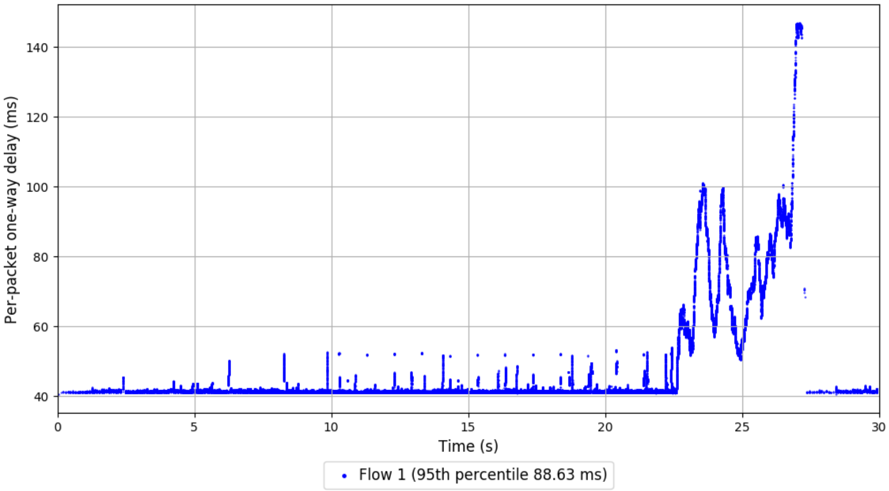




```
Run 3: Statistics of LEDBAT

Start at: 2017-12-05 10:22:52
End at: 2017-12-05 10:23:22
Local clock offset: 0.938 ms
Remote clock offset: -5.834 ms

# Below is generated by plot.py at 2017-12-05 15:45:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.86 Mbit/s
95th percentile per-packet one-way delay: 88.633 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 34.86 Mbit/s
95th percentile per-packet one-way delay: 88.633 ms
Loss rate: 0.16%
```

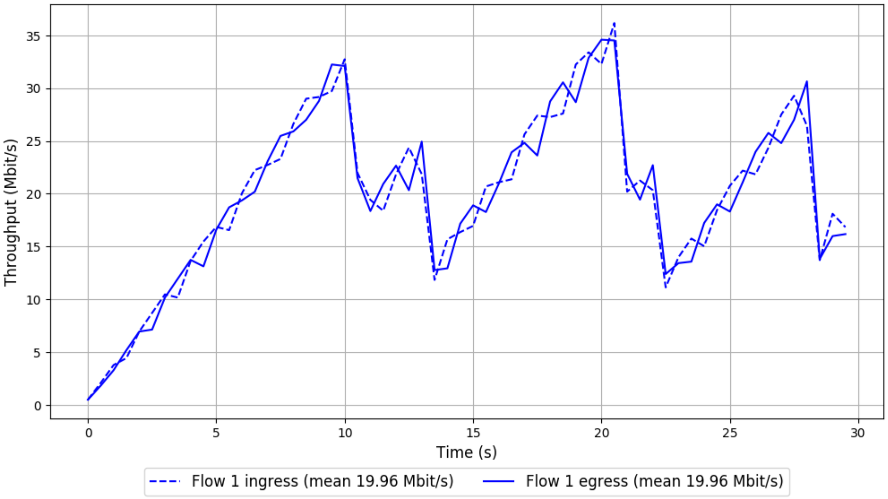
Run 3: Report of LEDBAT — Data Link

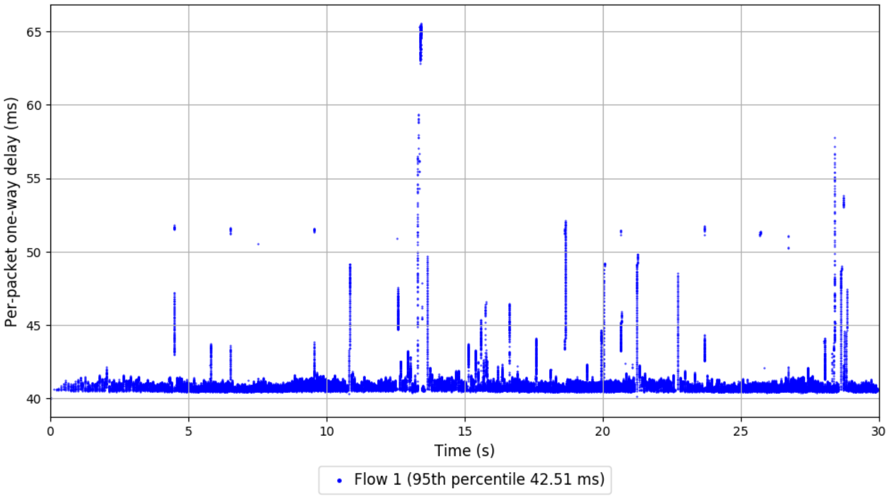




```
Run 4: Statistics of LEDBAT

Start at: 2017-12-05 10:39:25
End at: 2017-12-05 10:39:55
Local clock offset: 0.198 ms
Remote clock offset: -6.338 ms

# Below is generated by plot.py at 2017-12-05 15:45:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 19.96 Mbit/s
95th percentile per-packet one-way delay: 42.506 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 19.96 Mbit/s
95th percentile per-packet one-way delay: 42.506 ms
Loss rate: 0.29%
```

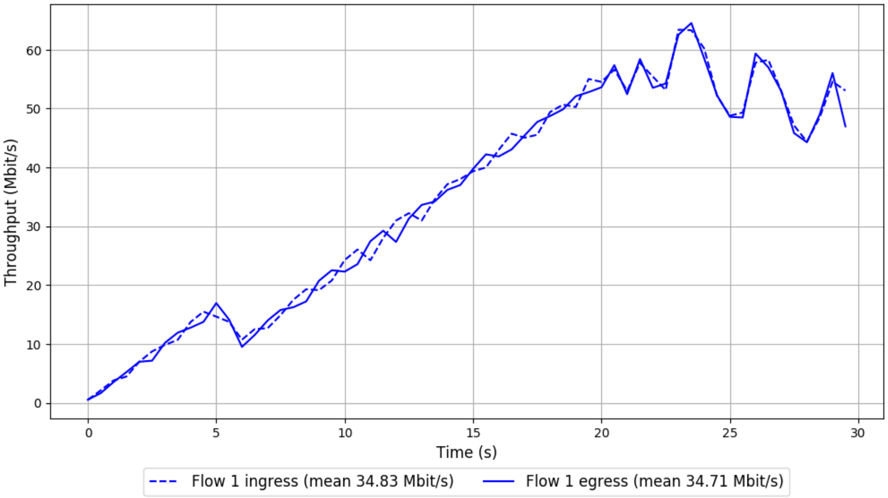
Run 4: Report of LEDBAT — Data Link

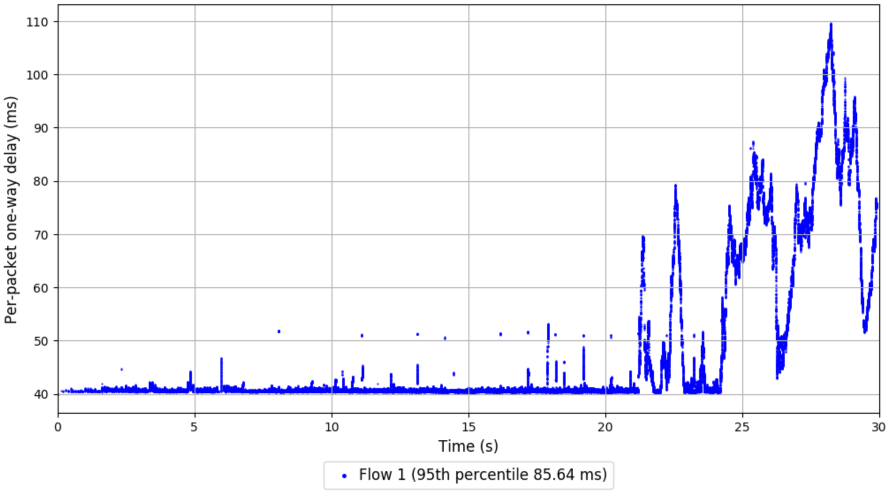




```
Run 5: Statistics of LEDBAT

Start at: 2017-12-05 10:55:52
End at: 2017-12-05 10:56:22
Local clock offset: -0.183 ms
Remote clock offset: -7.359 ms

# Below is generated by plot.py at 2017-12-05 15:45:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.71 Mbit/s
95th percentile per-packet one-way delay: 85.639 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 34.71 Mbit/s
95th percentile per-packet one-way delay: 85.639 ms
Loss rate: 0.63%
```

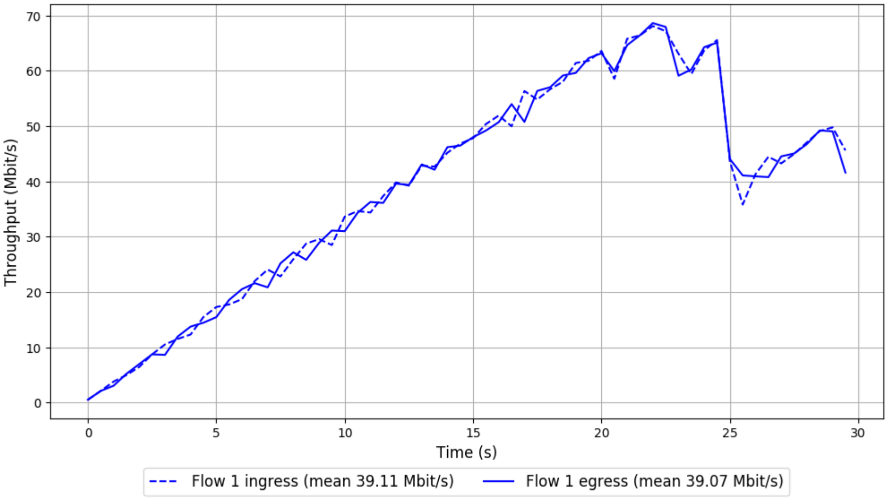
Run 5: Report of LEDBAT — Data Link

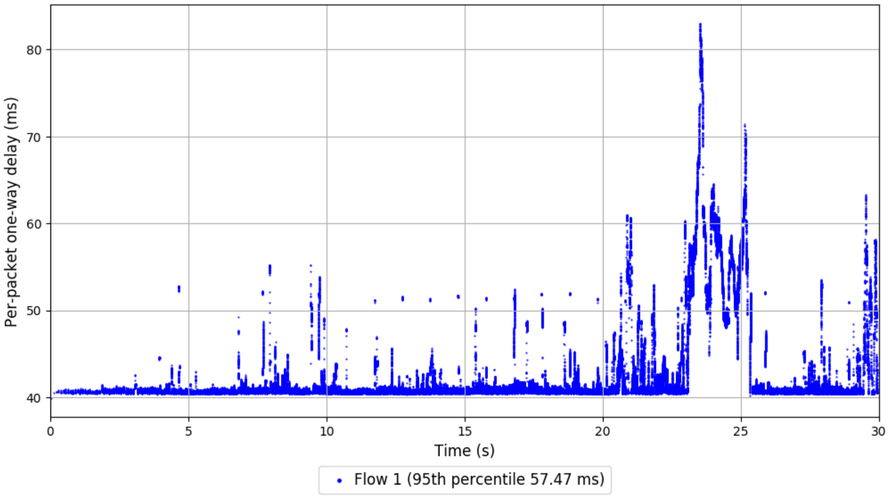




```
Run 6: Statistics of LEDBAT

Start at: 2017-12-05 11:12:20
End at: 2017-12-05 11:12:50
Local clock offset: -0.087 ms
Remote clock offset: -7.549 ms

# Below is generated by plot.py at 2017-12-05 15:45:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.07 Mbit/s
95th percentile per-packet one-way delay: 57.466 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 39.07 Mbit/s
95th percentile per-packet one-way delay: 57.466 ms
Loss rate: 0.39%
```

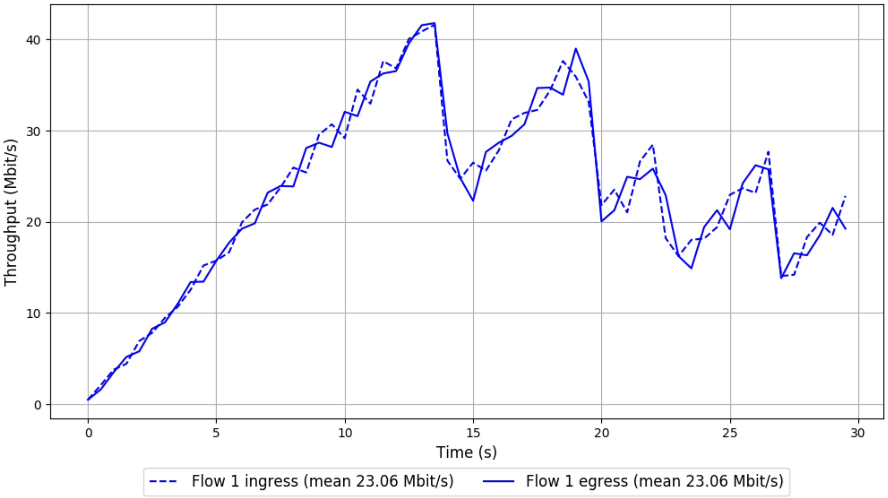
Run 6: Report of LEDBAT — Data Link

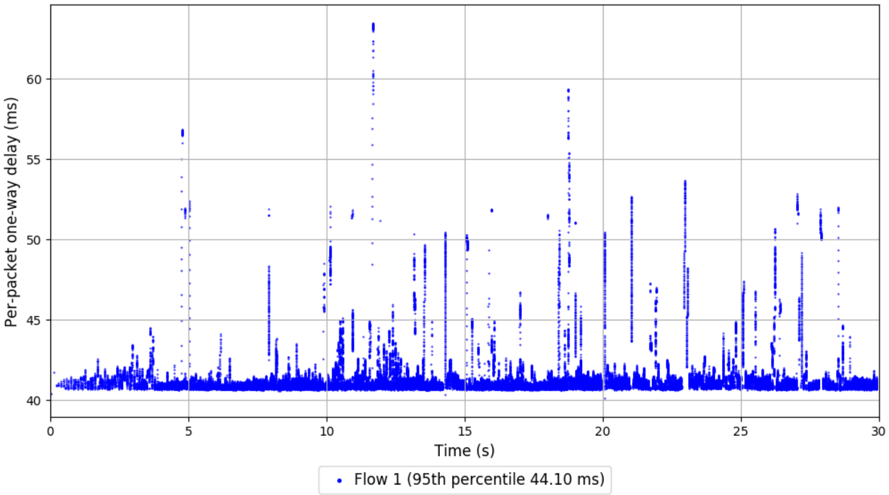




```
Run 7: Statistics of LEDBAT

Start at: 2017-12-05 11:28:46
End at: 2017-12-05 11:29:16
Local clock offset: -0.042 ms
Remote clock offset: -7.433 ms

# Below is generated by plot.py at 2017-12-05 15:45:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.06 Mbit/s
95th percentile per-packet one-way delay: 44.096 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 23.06 Mbit/s
95th percentile per-packet one-way delay: 44.096 ms
Loss rate: 0.30%
```

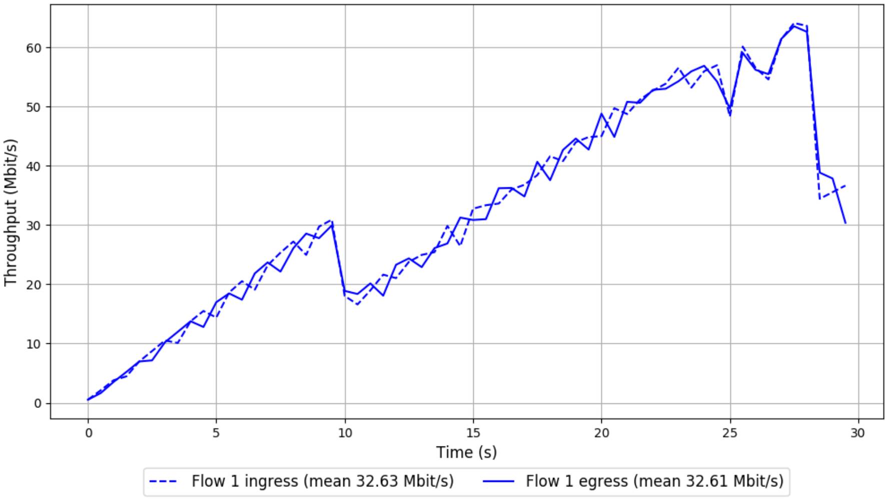
Run 7: Report of LEDBAT — Data Link

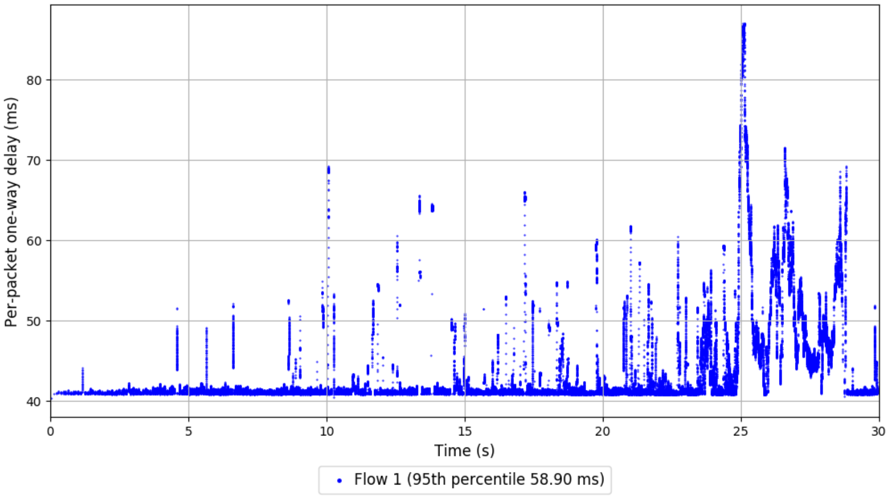




```
Run 8: Statistics of LEDBAT

Start at: 2017-12-05 11:45:49
End at: 2017-12-05 11:46:19
Local clock offset: -0.307 ms
Remote clock offset: -8.277 ms

# Below is generated by plot.py at 2017-12-05 15:45:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 32.61 Mbit/s
95th percentile per-packet one-way delay: 58.899 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 32.61 Mbit/s
95th percentile per-packet one-way delay: 58.899 ms
Loss rate: 0.35%
```

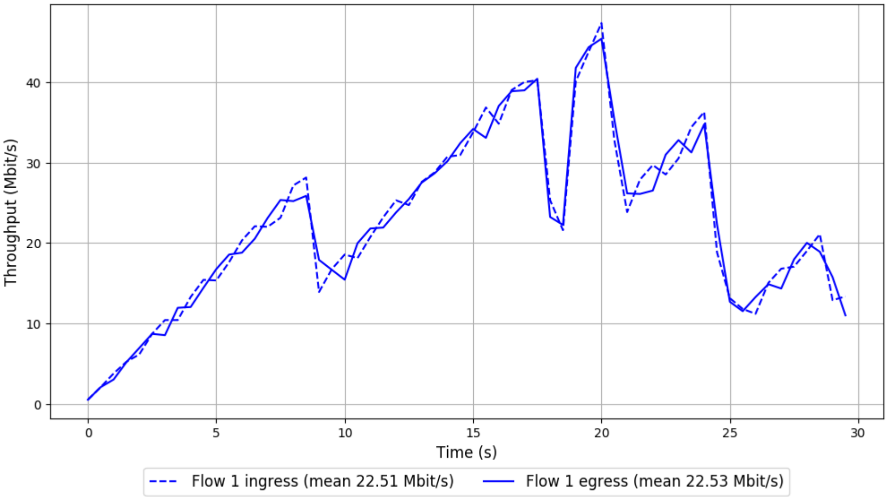
Run 8: Report of LEDBAT — Data Link

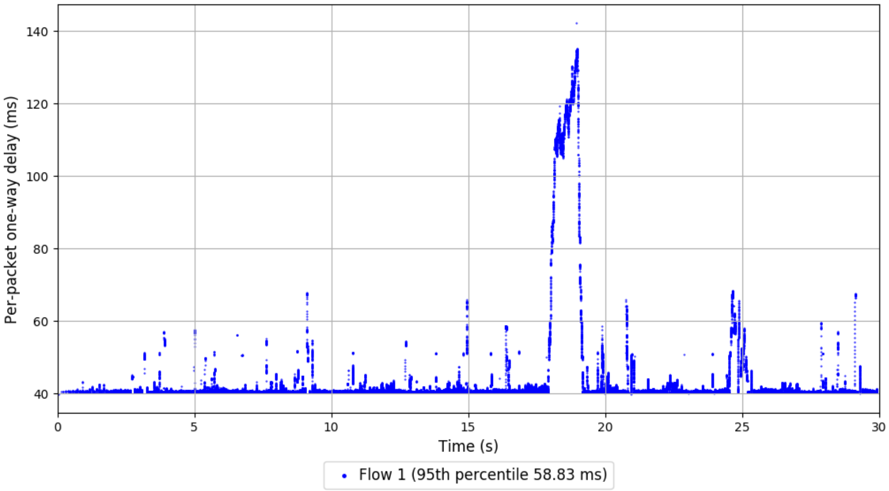




```
Run 9: Statistics of LEDBAT

Start at: 2017-12-05 12:03:42
End at: 2017-12-05 12:04:12
Local clock offset: -0.065 ms
Remote clock offset: -8.191 ms

# Below is generated by plot.py at 2017-12-05 15:45:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.53 Mbit/s
95th percentile per-packet one-way delay: 58.826 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 22.53 Mbit/s
95th percentile per-packet one-way delay: 58.826 ms
Loss rate: 0.20%
```

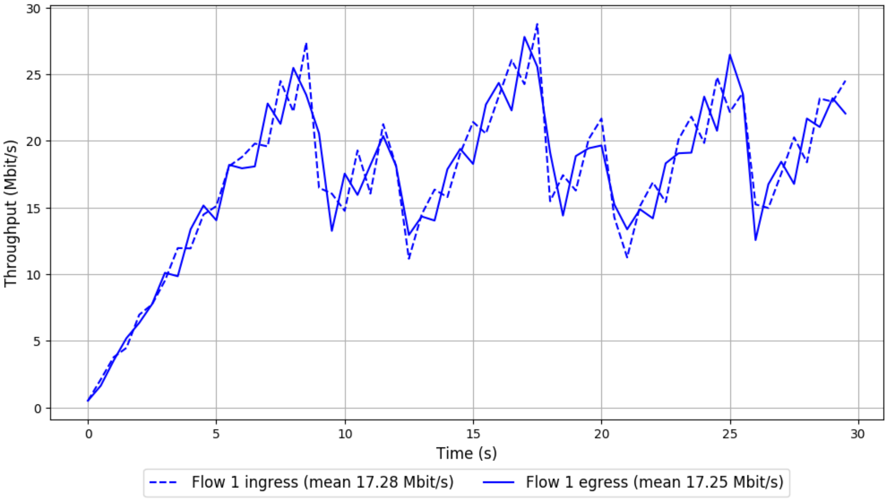
Run 9: Report of LEDBAT — Data Link

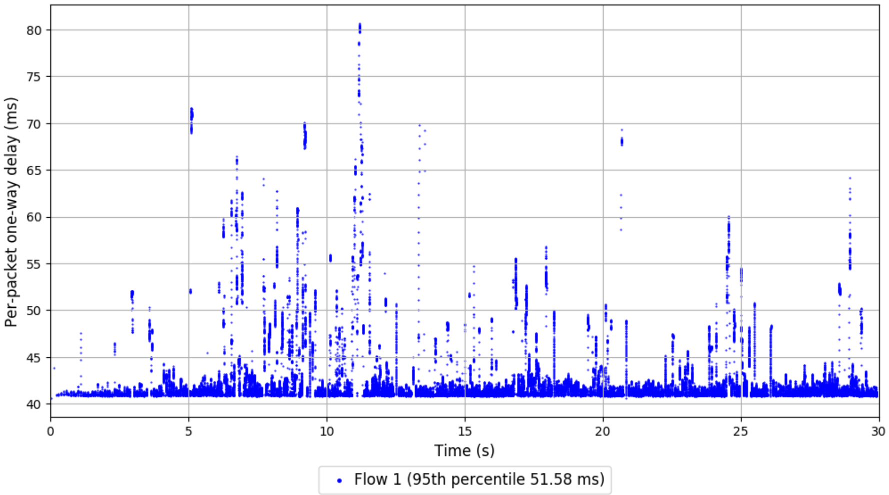




```
Run 10: Statistics of LEDBAT

Start at: 2017-12-05 12:20:43
End at: 2017-12-05 12:21:13
Local clock offset: 0.364 ms
Remote clock offset: -7.755 ms

# Below is generated by plot.py at 2017-12-05 15:45:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 17.25 Mbit/s
95th percentile per-packet one-way delay: 51.577 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 17.25 Mbit/s
95th percentile per-packet one-way delay: 51.577 ms
Loss rate: 0.46%
```

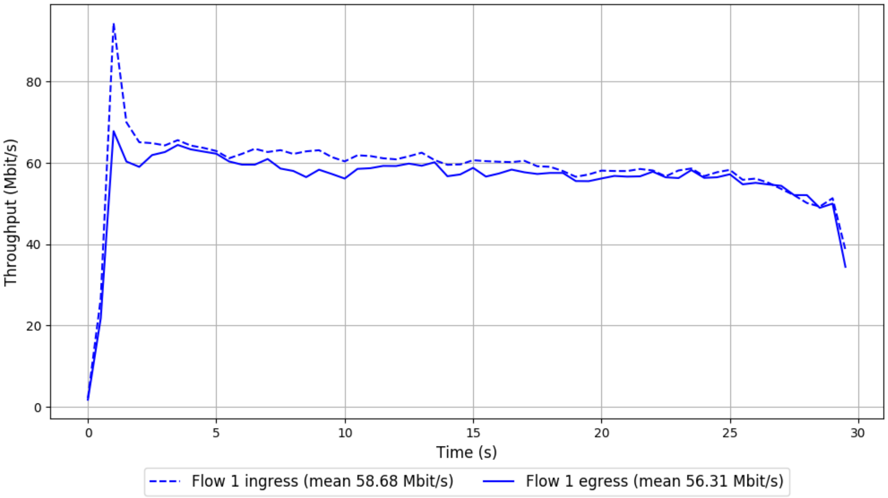
Run 10: Report of LEDBAT — Data Link

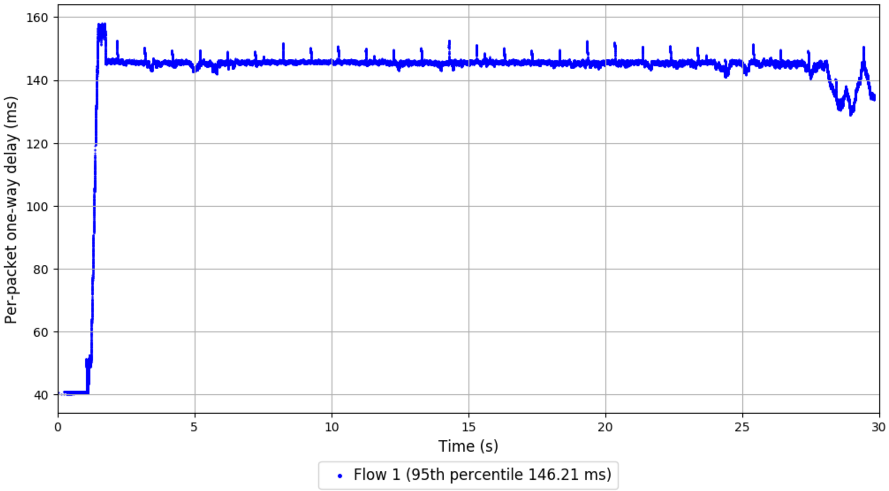




```
Run 1: Statistics of PCC

Start at: 2017-12-05 10:01:15
End at: 2017-12-05 10:01:45
Local clock offset: 0.918 ms
Remote clock offset: -5.911 ms

# Below is generated by plot.py at 2017-12-05 15:46:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.31 Mbit/s
95th percentile per-packet one-way delay: 146.210 ms
Loss rate: 4.31%
-- Flow 1:
Average throughput: 56.31 Mbit/s
95th percentile per-packet one-way delay: 146.210 ms
Loss rate: 4.31%
```

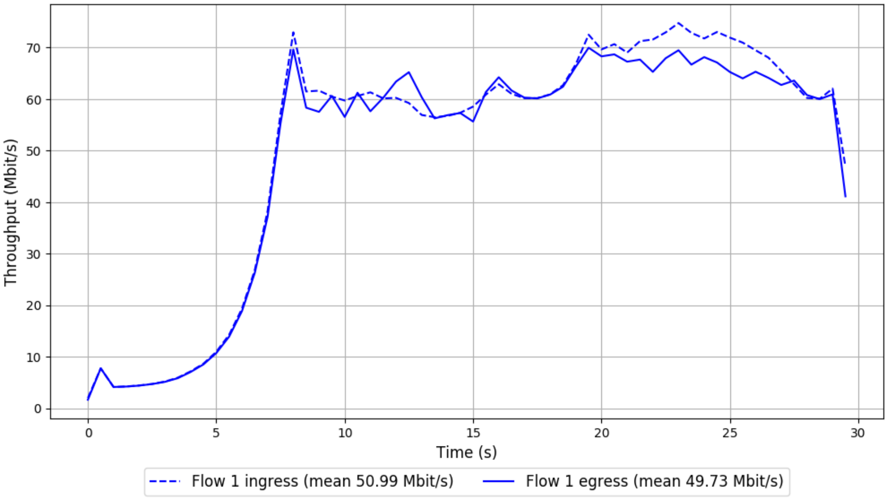
Run 1: Report of PCC — Data Link

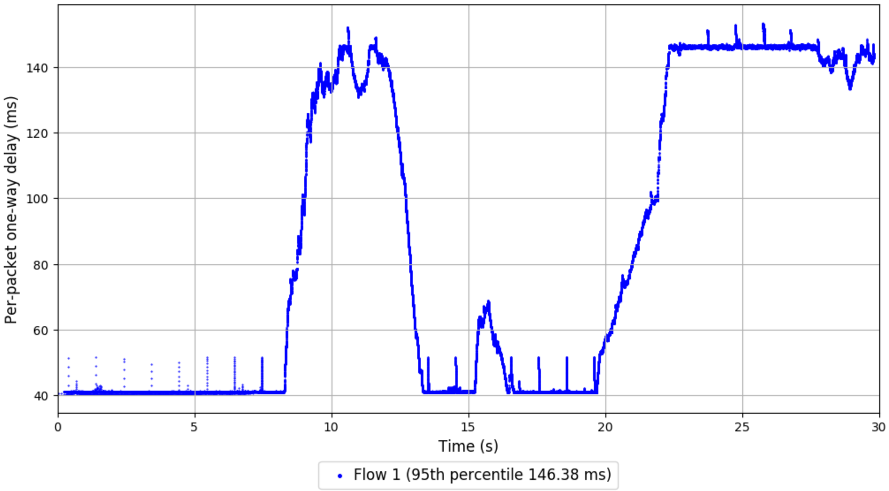




```
Run 2: Statistics of PCC

Start at: 2017-12-05 10:18:11
End at: 2017-12-05 10:18:41
Local clock offset: 1.047 ms
Remote clock offset: -5.883 ms

# Below is generated by plot.py at 2017-12-05 15:46:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.73 Mbit/s
95th percentile per-packet one-way delay: 146.377 ms
Loss rate: 2.77%
-- Flow 1:
Average throughput: 49.73 Mbit/s
95th percentile per-packet one-way delay: 146.377 ms
Loss rate: 2.77%
```

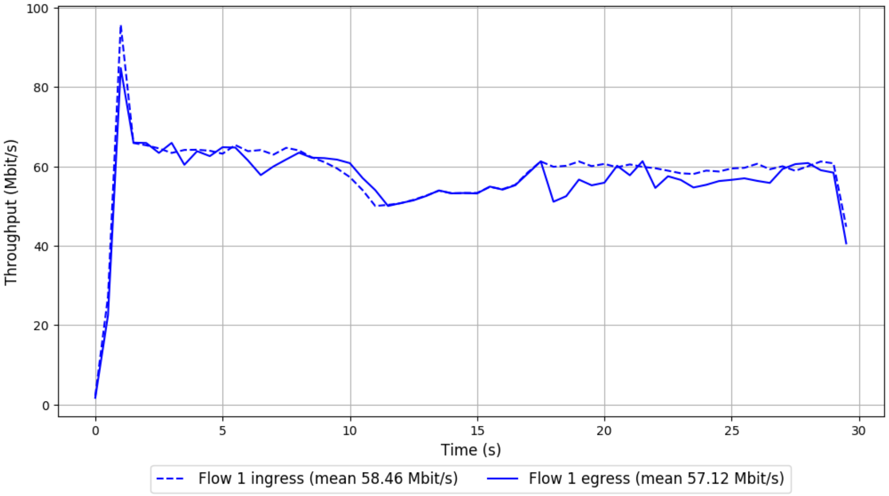
Run 2: Report of PCC — Data Link

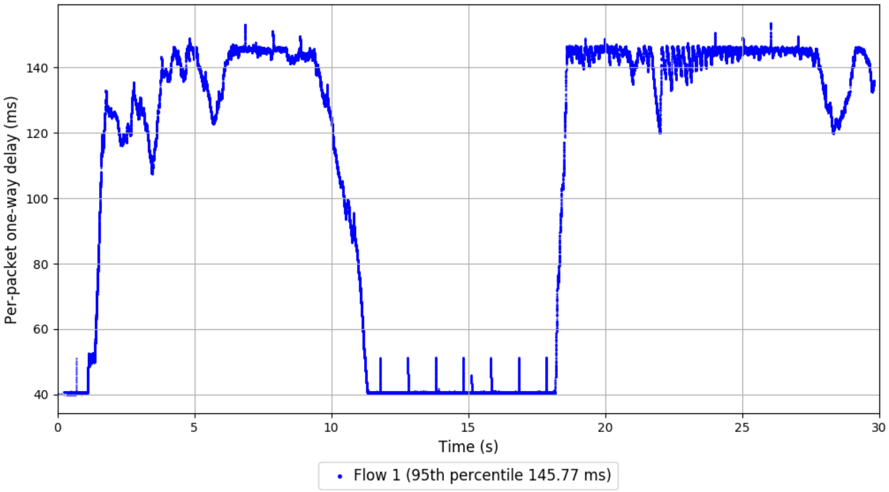




```
Run 3: Statistics of PCC

Start at: 2017-12-05 10:34:43
End at: 2017-12-05 10:35:13
Local clock offset: 0.47 ms
Remote clock offset: -6.148 ms

# Below is generated by plot.py at 2017-12-05 15:46:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.12 Mbit/s
95th percentile per-packet one-way delay: 145.768 ms
Loss rate: 2.58%
-- Flow 1:
Average throughput: 57.12 Mbit/s
95th percentile per-packet one-way delay: 145.768 ms
Loss rate: 2.58%
```

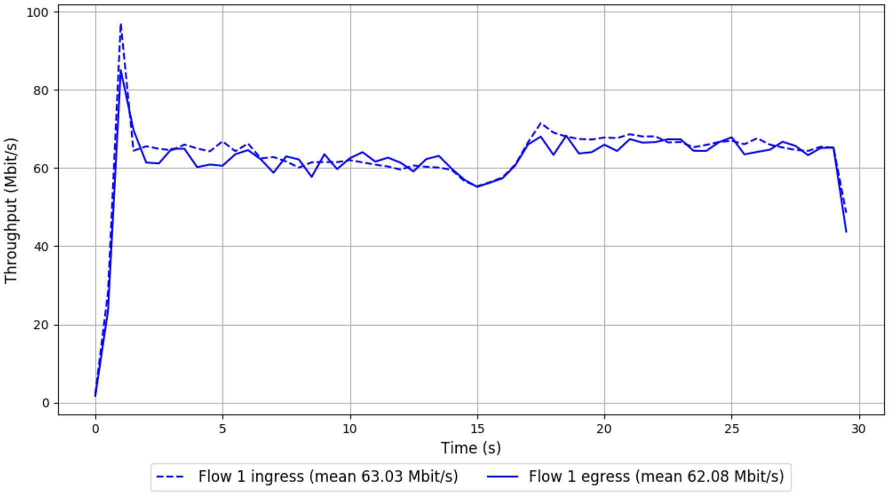
Run 3: Report of PCC — Data Link

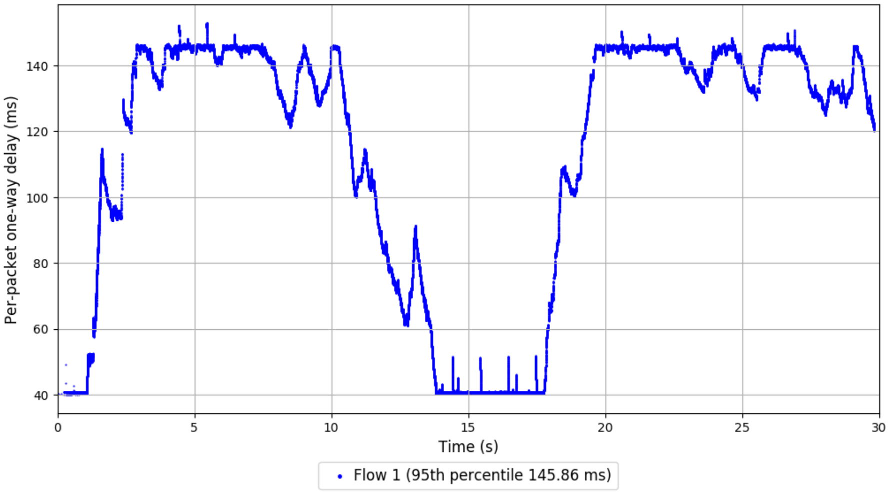




```
Run 4: Statistics of PCC

Start at: 2017-12-05 10:51:11
End at: 2017-12-05 10:51:41
Local clock offset: -0.1 ms
Remote clock offset: -7.019 ms

# Below is generated by plot.py at 2017-12-05 15:46:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.08 Mbit/s
95th percentile per-packet one-way delay: 145.857 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 62.08 Mbit/s
95th percentile per-packet one-way delay: 145.857 ms
Loss rate: 1.80%
```

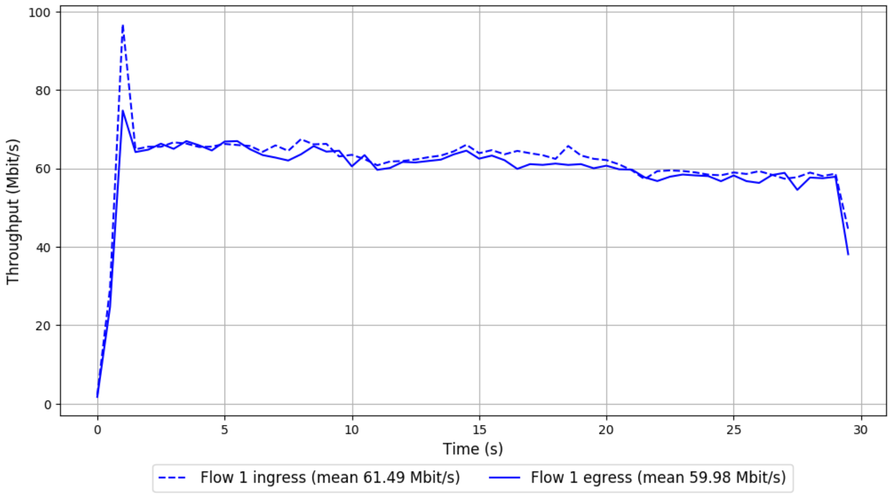
Run 4: Report of PCC — Data Link

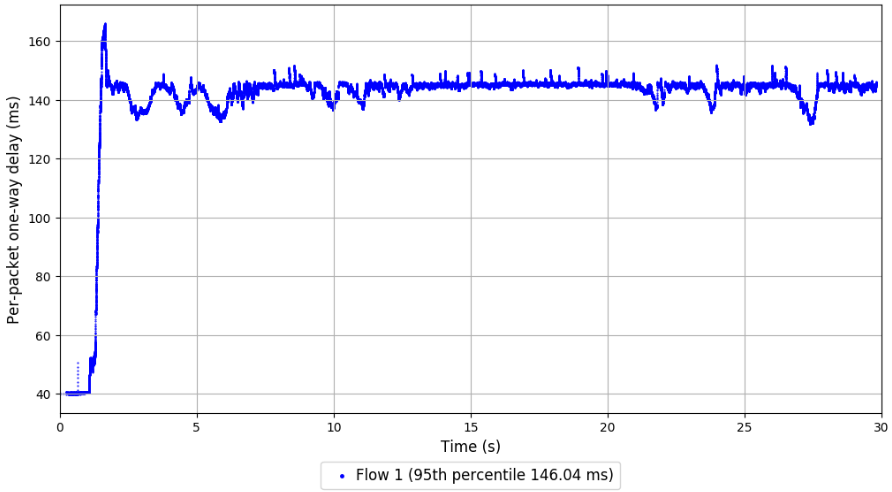




```
Run 5: Statistics of PCC

Start at: 2017-12-05 11:07:39
End at: 2017-12-05 11:08:09
Local clock offset: -0.333 ms
Remote clock offset: -7.474 ms

# Below is generated by plot.py at 2017-12-05 15:46:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.98 Mbit/s
95th percentile per-packet one-way delay: 146.037 ms
Loss rate: 2.74%
-- Flow 1:
Average throughput: 59.98 Mbit/s
95th percentile per-packet one-way delay: 146.037 ms
Loss rate: 2.74%
```

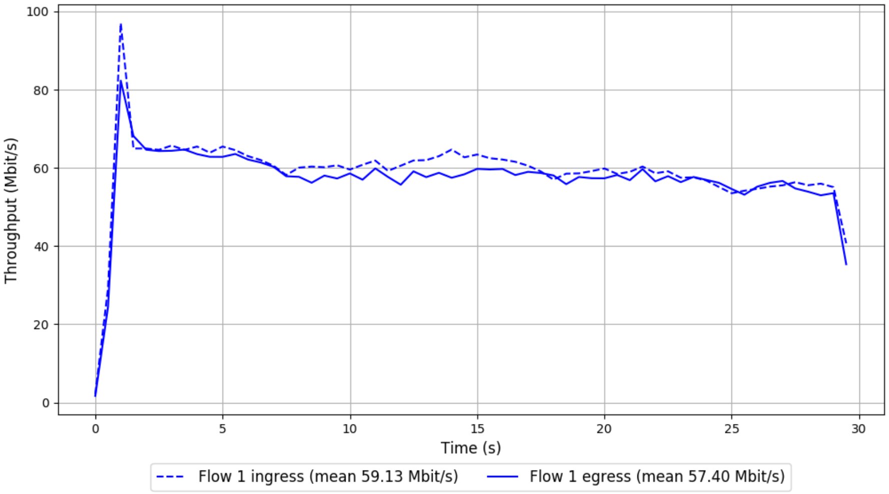
Run 5: Report of PCC — Data Link

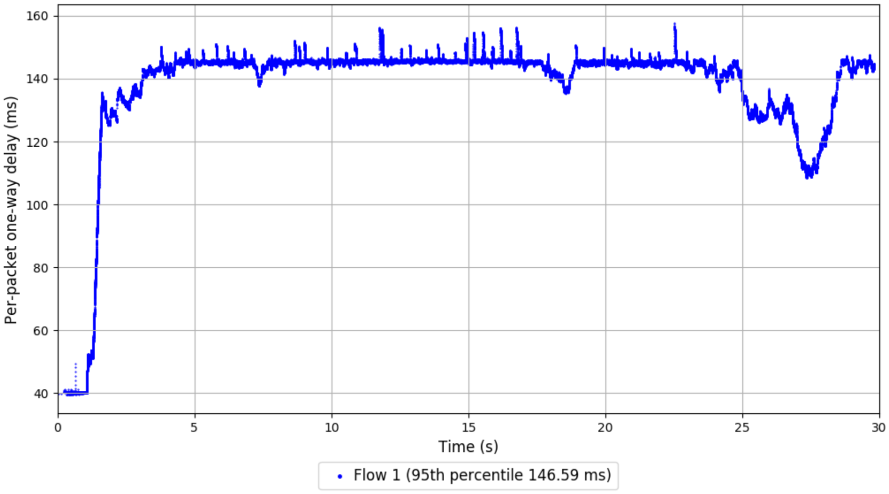




```
Run 6: Statistics of PCC

Start at: 2017-12-05 11:24:07
End at: 2017-12-05 11:24:37
Local clock offset: -0.275 ms
Remote clock offset: -7.418 ms

# Below is generated by plot.py at 2017-12-05 15:46:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.40 Mbit/s
95th percentile per-packet one-way delay: 146.594 ms
Loss rate: 3.20%
-- Flow 1:
Average throughput: 57.40 Mbit/s
95th percentile per-packet one-way delay: 146.594 ms
Loss rate: 3.20%
```

Run 6: Report of PCC — Data Link





```
Run 7: Statistics of PCC

/home/ubuntu/pantheon_data/2017-12-05T09-47-China-to-AWS-Korea-10-runs/pcc_stats_run7.log do
```

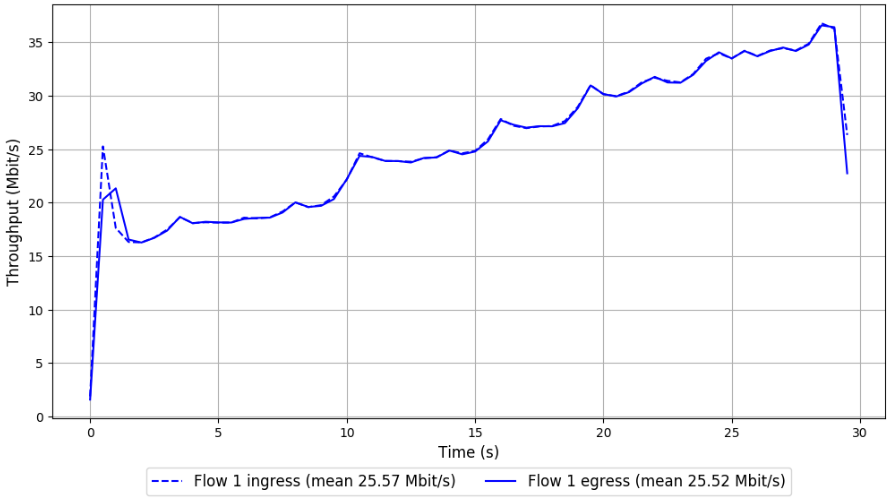
Run 7: Report of PCC — Data Link

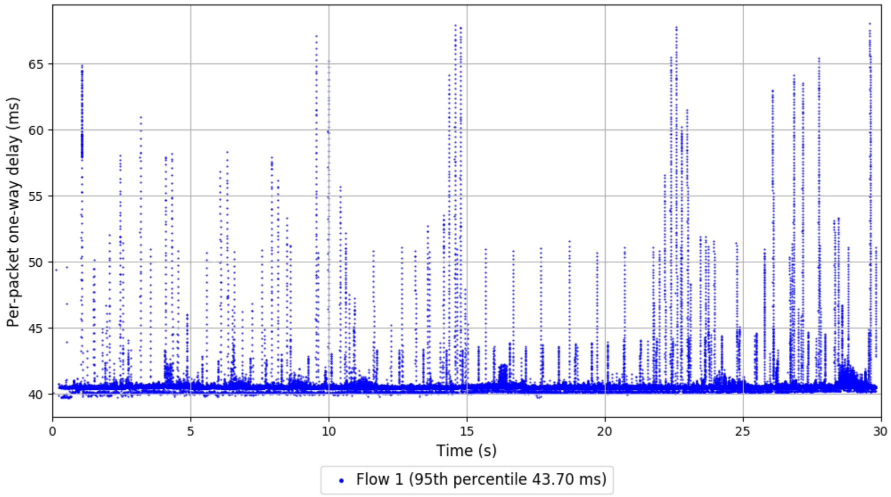
Figure is missing

Figure is missing

```
Run 8: Statistics of PCC

Start at: 2017-12-05 11:59:01
End at: 2017-12-05 11:59:31
Local clock offset: -0.281 ms
Remote clock offset: -8.402 ms

# Below is generated by plot.py at 2017-12-05 15:46:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 25.52 Mbit/s
95th percentile per-packet one-way delay: 43.700 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 25.52 Mbit/s
95th percentile per-packet one-way delay: 43.700 ms
Loss rate: 0.46%
```

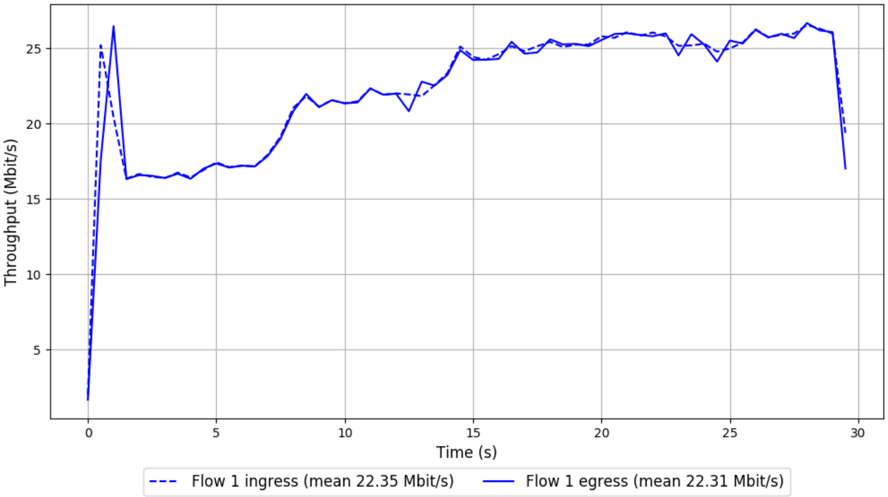
Run 8: Report of PCC — Data Link

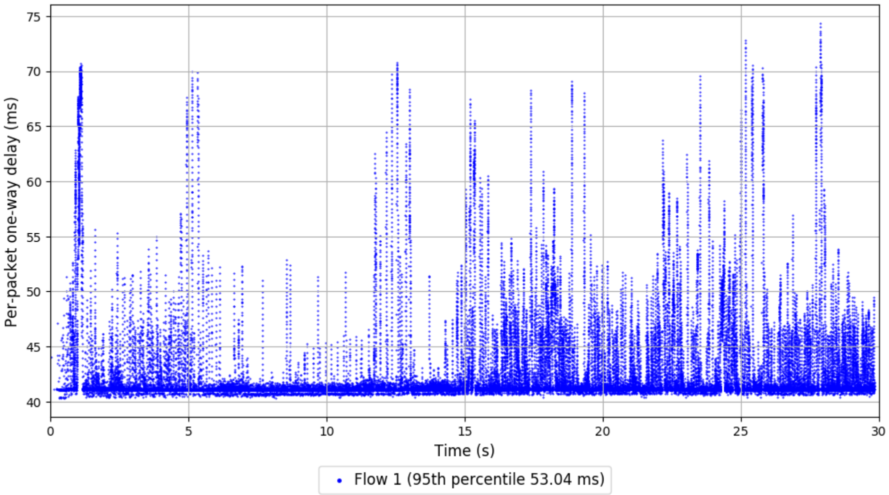




```
Run 9: Statistics of PCC

Start at: 2017-12-05 12:16:01
End at: 2017-12-05 12:16:31
Local clock offset: 0.168 ms
Remote clock offset: -8.145 ms

# Below is generated by plot.py at 2017-12-05 15:46:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.31 Mbit/s
95th percentile per-packet one-way delay: 53.044 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 22.31 Mbit/s
95th percentile per-packet one-way delay: 53.044 ms
Loss rate: 0.47%
```

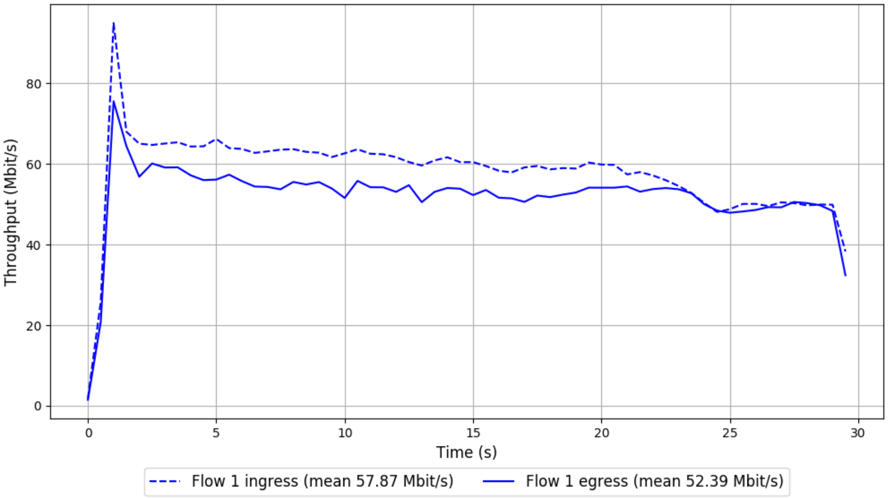
Run 9: Report of PCC — Data Link

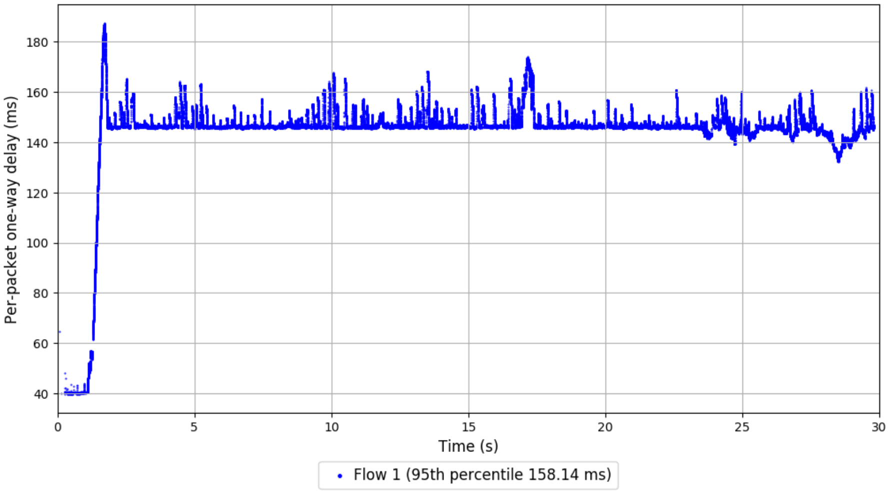




```
Run 10: Statistics of PCC

Start at: 2017-12-05 12:32:39
End at: 2017-12-05 12:33:09
Local clock offset: 0.57 ms
Remote clock offset: -6.981 ms

# Below is generated by plot.py at 2017-12-05 15:47:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.39 Mbit/s
95th percentile per-packet one-way delay: 158.136 ms
Loss rate: 9.81%
-- Flow 1:
Average throughput: 52.39 Mbit/s
95th percentile per-packet one-way delay: 158.136 ms
Loss rate: 9.81%
```

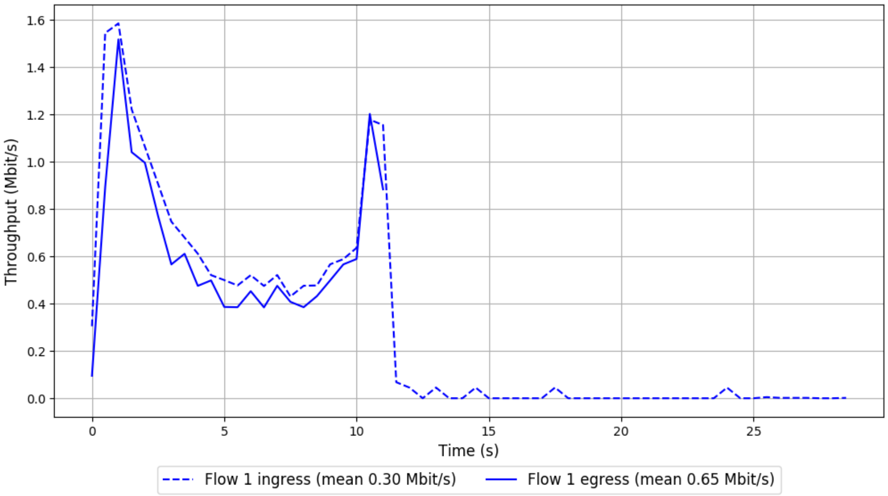
Run 10: Report of PCC — Data Link

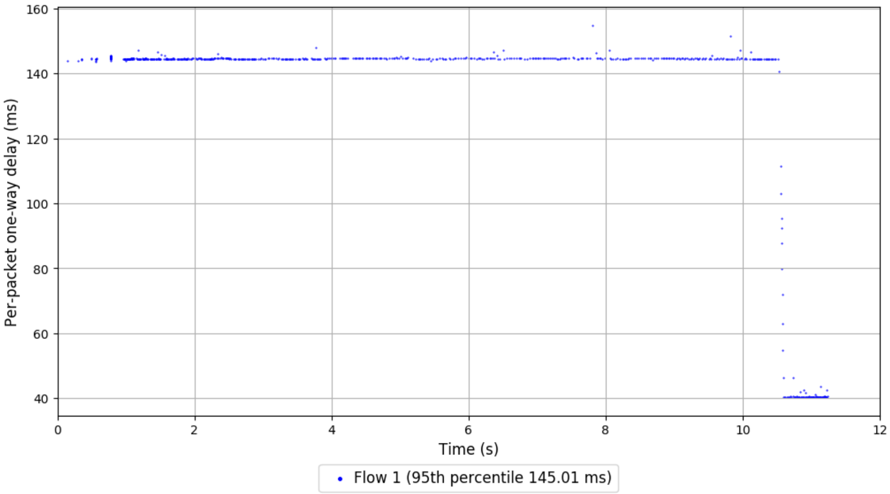




```
Run 1: Statistics of QUIC Cubic

Start at: 2017-12-05 09:57:59
End at: 2017-12-05 09:58:29
Local clock offset: 0.852 ms
Remote clock offset: -5.837 ms
```

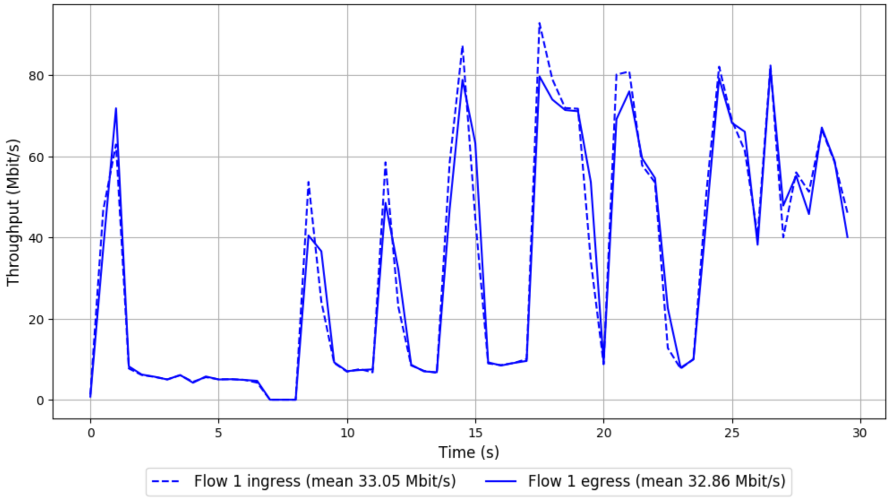
Run 1: Report of QUIC Cubic — Data Link

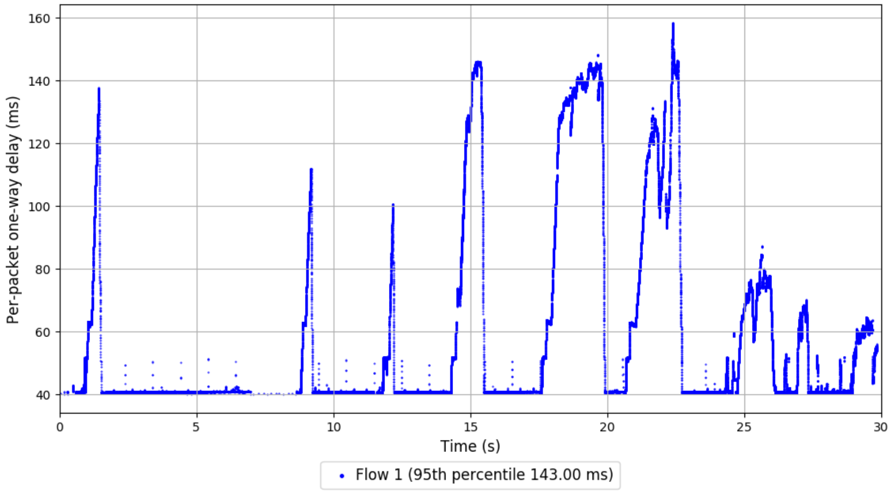




```
Run 2: Statistics of QUIC Cubic

Start at: 2017-12-05 10:15:47
End at: 2017-12-05 10:16:17
Local clock offset: 1.024 ms
Remote clock offset: -5.824 ms

# Below is generated by plot.py at 2017-12-05 15:47:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 32.86 Mbit/s
95th percentile per-packet one-way delay: 142.997 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 32.86 Mbit/s
95th percentile per-packet one-way delay: 142.997 ms
Loss rate: 0.84%
```

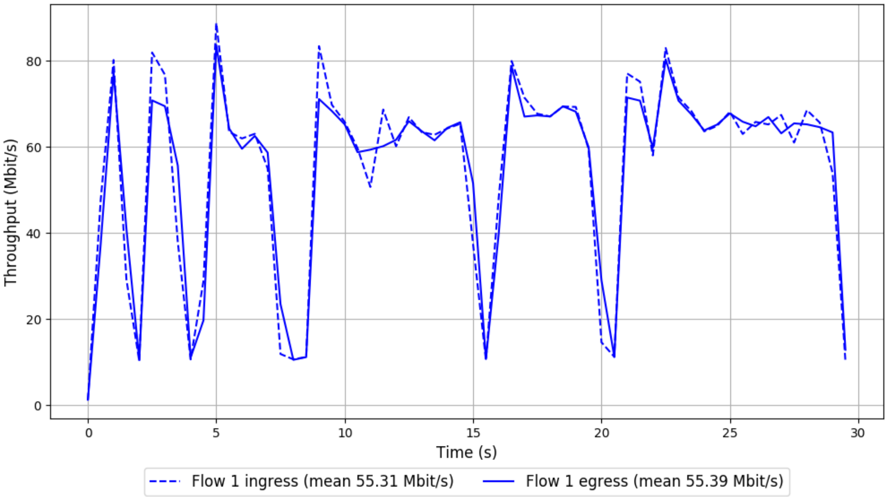
Run 2: Report of QUIC Cubic — Data Link

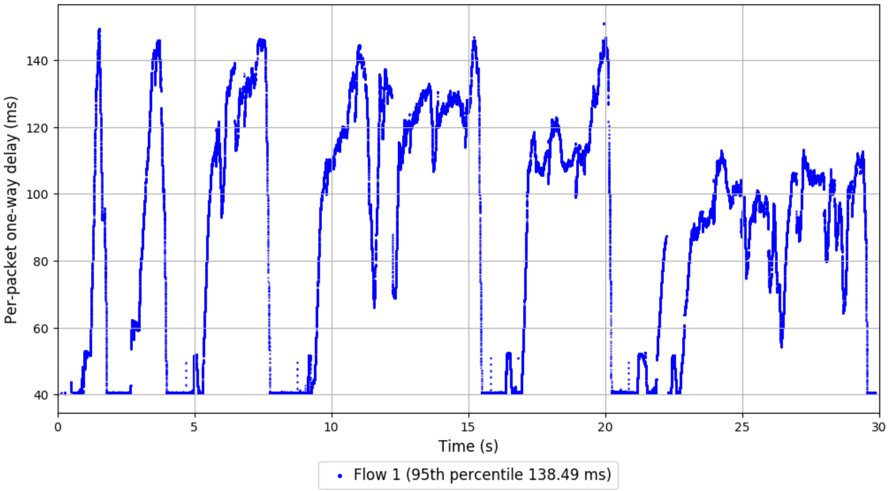




```
Run 3: Statistics of QUIC Cubic

Start at: 2017-12-05 10:32:17
End at: 2017-12-05 10:32:47
Local clock offset: 0.673 ms
Remote clock offset: -6.067 ms

# Below is generated by plot.py at 2017-12-05 15:47:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.39 Mbit/s
95th percentile per-packet one-way delay: 138.493 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 55.39 Mbit/s
95th percentile per-packet one-way delay: 138.493 ms
Loss rate: 0.14%
```

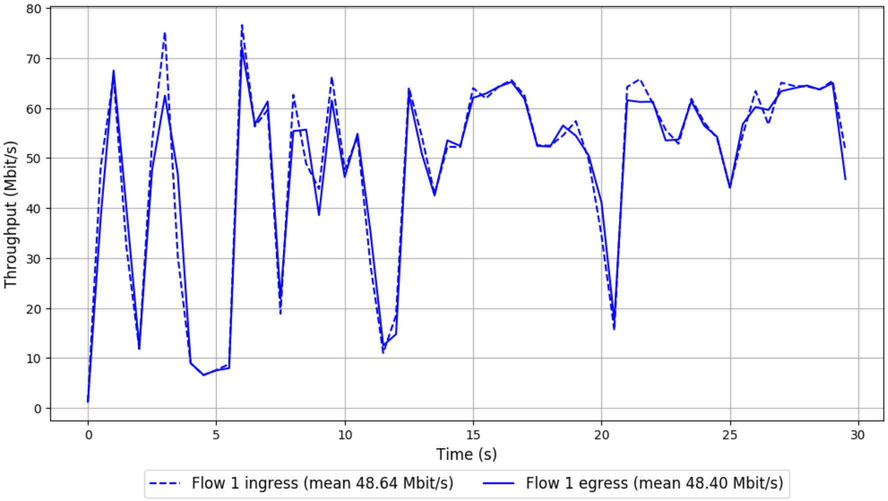
Run 3: Report of QUIC Cubic — Data Link

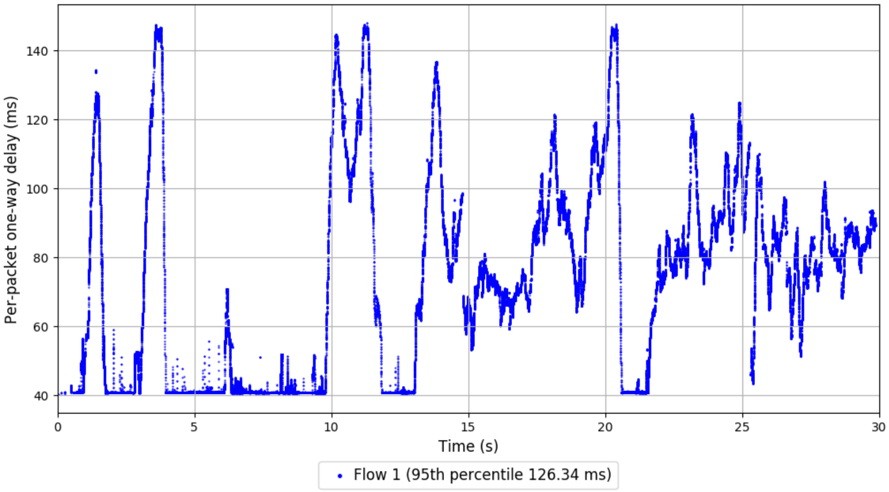




```
Run 4: Statistics of QUIC Cubic

Start at: 2017-12-05 10:48:48
End at: 2017-12-05 10:49:18
Local clock offset: 0.146 ms
Remote clock offset: -6.911 ms

# Below is generated by plot.py at 2017-12-05 15:47:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.40 Mbit/s
95th percentile per-packet one-way delay: 126.344 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 48.40 Mbit/s
95th percentile per-packet one-way delay: 126.344 ms
Loss rate: 0.78%
```

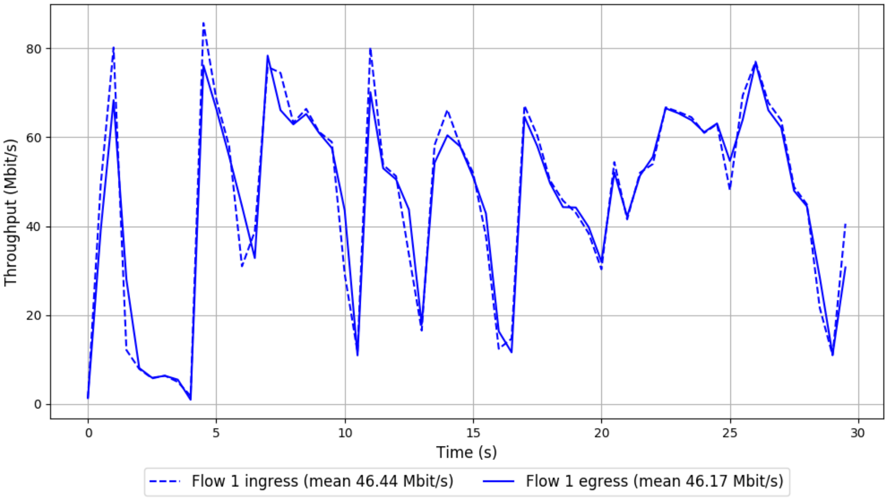
Run 4: Report of QUIC Cubic — Data Link

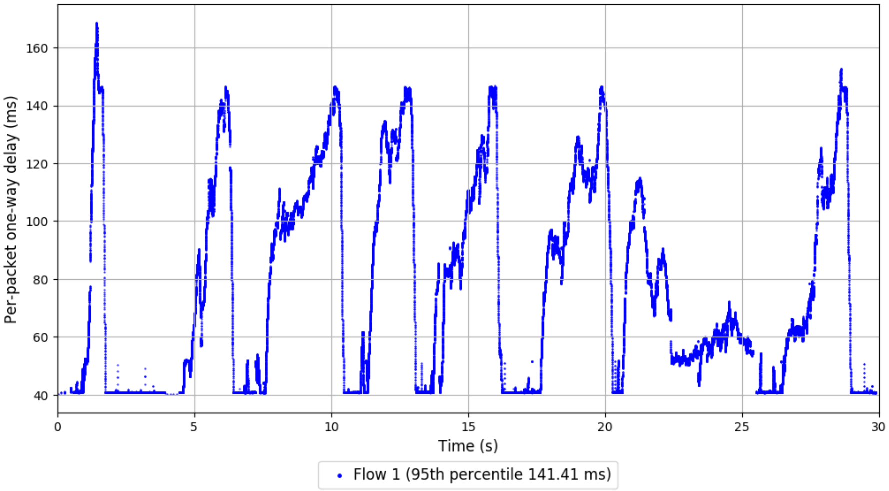




```
Run 5: Statistics of QUIC Cubic

Start at: 2017-12-05 11:05:16
End at: 2017-12-05 11:05:47
Local clock offset: -0.171 ms
Remote clock offset: -7.696 ms

# Below is generated by plot.py at 2017-12-05 15:47:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.17 Mbit/s
95th percentile per-packet one-way delay: 141.413 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 46.17 Mbit/s
95th percentile per-packet one-way delay: 141.413 ms
Loss rate: 0.86%
```

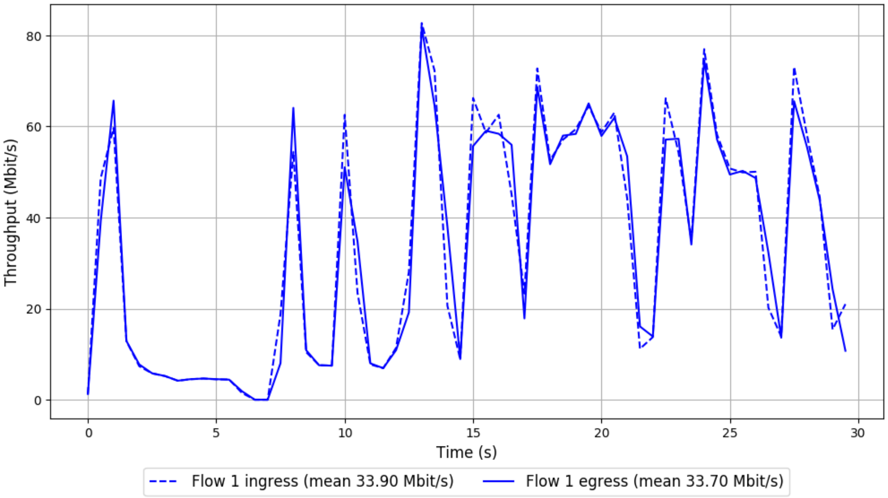
Run 5: Report of QUIC Cubic — Data Link

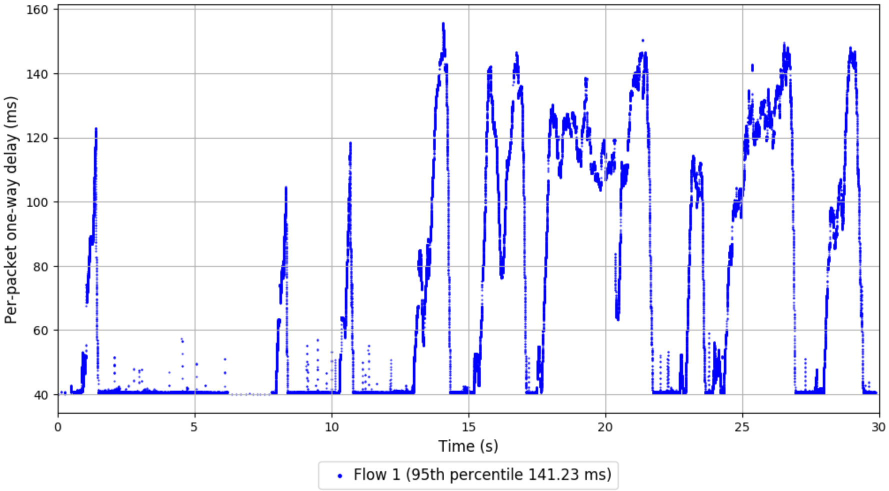




```
Run 6: Statistics of QUIC Cubic

Start at: 2017-12-05 11:21:44
End at: 2017-12-05 11:22:14
Local clock offset: -0.166 ms
Remote clock offset: -7.49 ms

# Below is generated by plot.py at 2017-12-05 15:47:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 33.70 Mbit/s
95th percentile per-packet one-way delay: 141.230 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 33.70 Mbit/s
95th percentile per-packet one-way delay: 141.230 ms
Loss rate: 0.90%
```

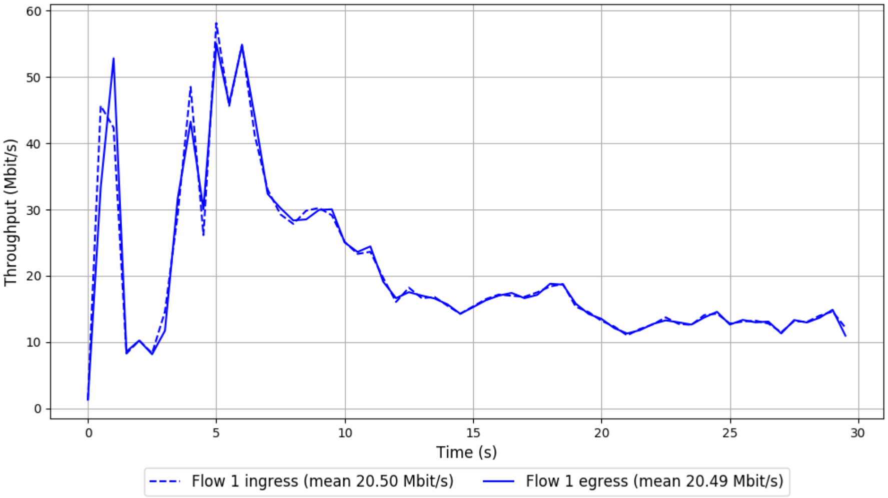
Run 6: Report of QUIC Cubic — Data Link

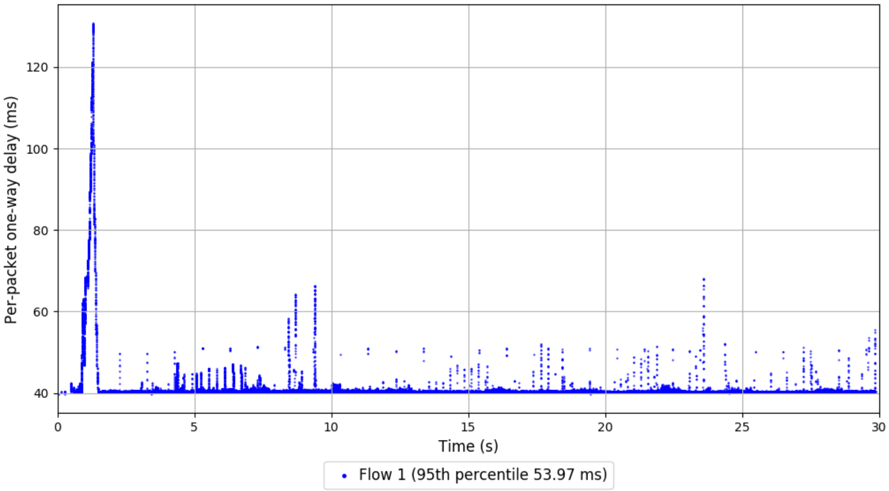




```
Run 7: Statistics of QUIC Cubic

Start at: 2017-12-05 11:38:07
End at: 2017-12-05 11:38:37
Local clock offset: -0.27 ms
Remote clock offset: -7.831 ms

# Below is generated by plot.py at 2017-12-05 15:47:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 20.49 Mbit/s
95th percentile per-packet one-way delay: 53.967 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 20.49 Mbit/s
95th percentile per-packet one-way delay: 53.967 ms
Loss rate: 0.34%
```

Run 7: Report of QUIC Cubic — Data Link





Run 8: Statistics of QUIC Cubic

```
/home/ubuntu/pantheon_data/2017-12-05T09-47-China-to-AWS-Korea-10-runs/quic_stats_run8.log
```

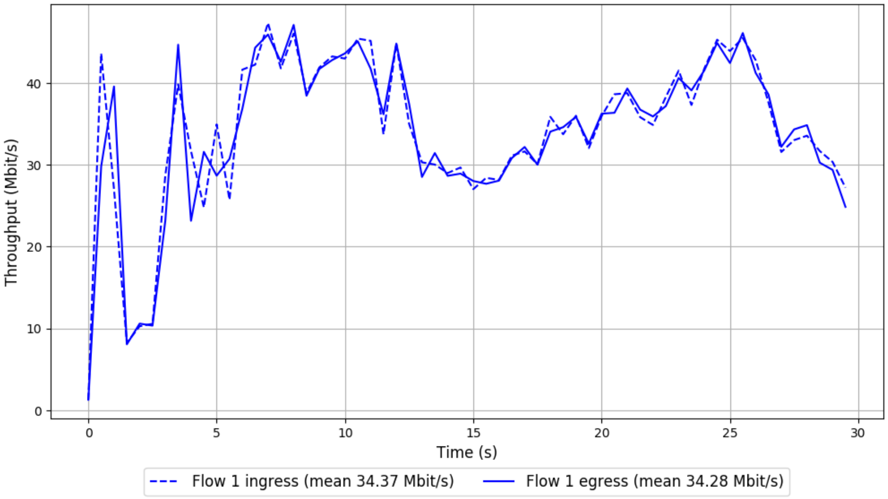
Run 8: Report of QUIC Cubic — Data Link

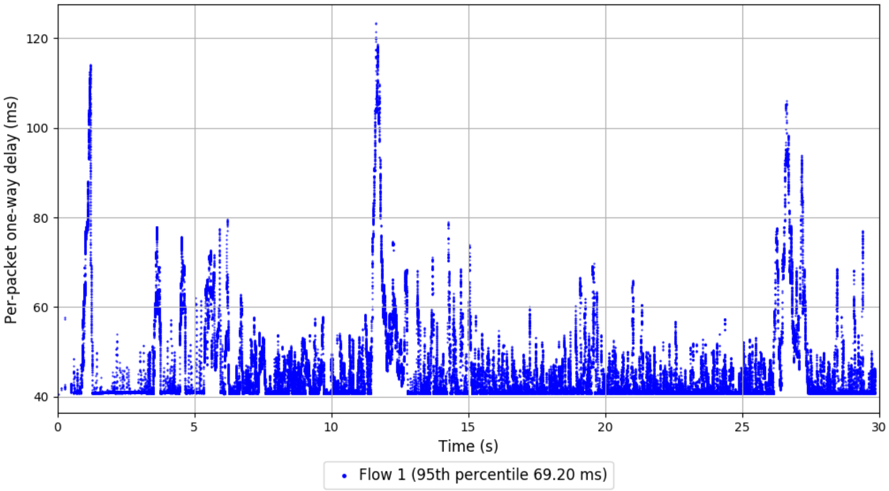
Figure is missing

Figure is missing

```
Run 9: Statistics of QUIC Cubic

Start at: 2017-12-05 12:13:35
End at: 2017-12-05 12:14:05
Local clock offset: 0.11 ms
Remote clock offset: -7.964 ms

# Below is generated by plot.py at 2017-12-05 15:47:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.28 Mbit/s
95th percentile per-packet one-way delay: 69.197 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 34.28 Mbit/s
95th percentile per-packet one-way delay: 69.197 ms
Loss rate: 0.55%
```

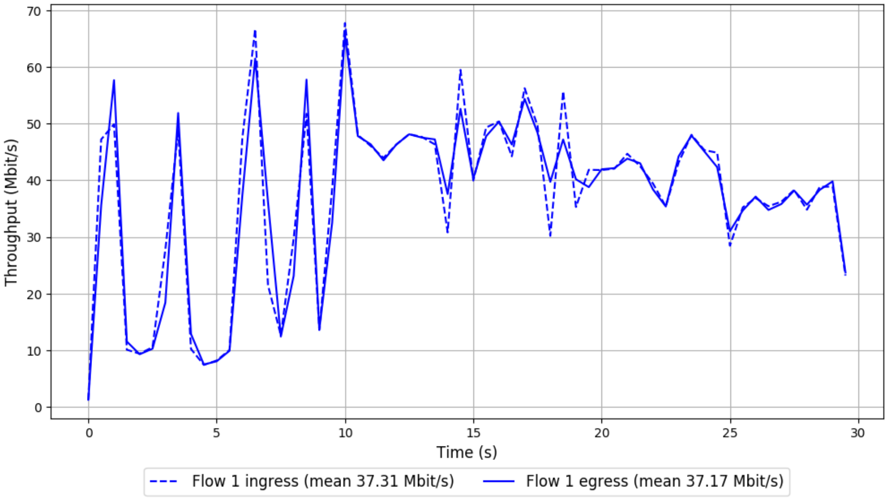
Run 9: Report of QUIC Cubic — Data Link

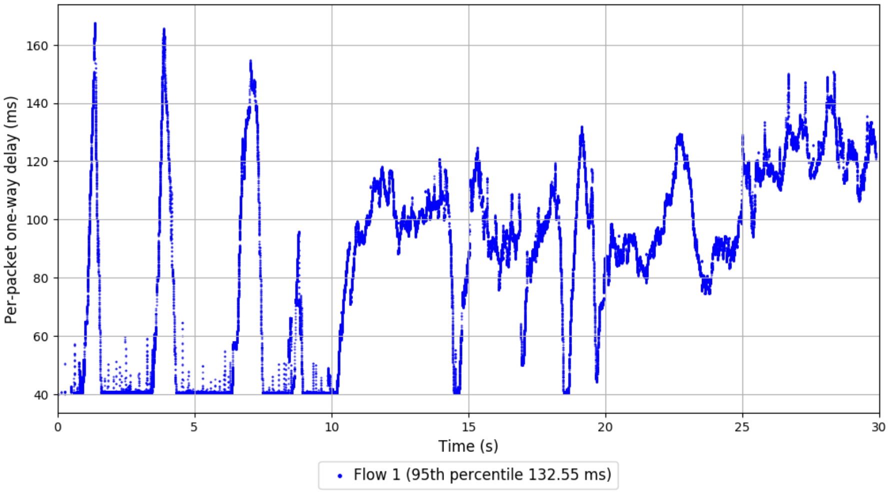




```
Run 10: Statistics of QUIC Cubic

Start at: 2017-12-05 12:30:12
End at: 2017-12-05 12:30:42
Local clock offset: 0.54 ms
Remote clock offset: -7.328 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.17 Mbit/s
95th percentile per-packet one-way delay: 132.552 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 37.17 Mbit/s
95th percentile per-packet one-way delay: 132.552 ms
Loss rate: 0.68%
```

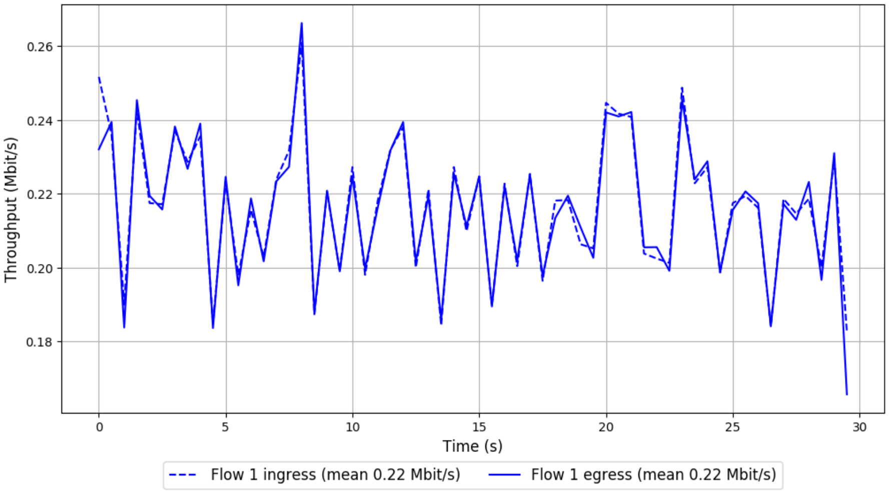
Run 10: Report of QUIC Cubic — Data Link

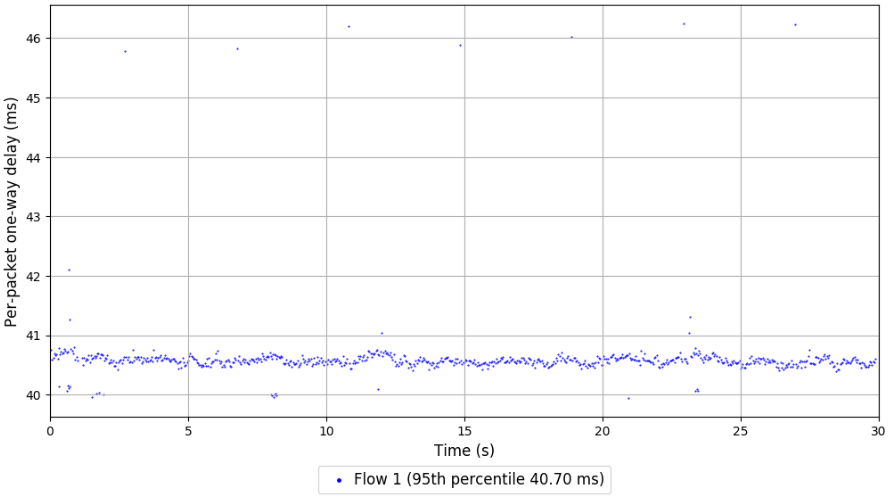




```
Run 1: Statistics of SCReAM

Start at: 2017-12-05 10:03:44
End at: 2017-12-05 10:04:14
Local clock offset: 0.994 ms
Remote clock offset: -5.83 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.705 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.705 ms
Loss rate: 0.26%
```

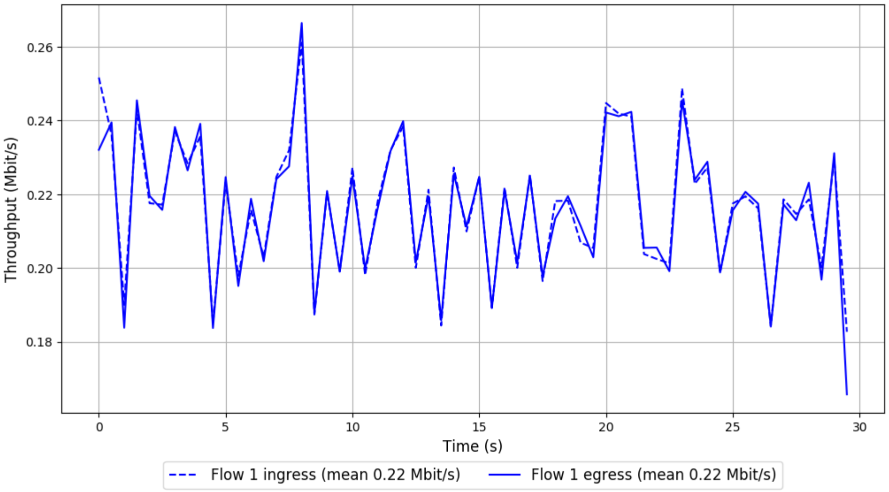
Run 1: Report of SCReAM — Data Link

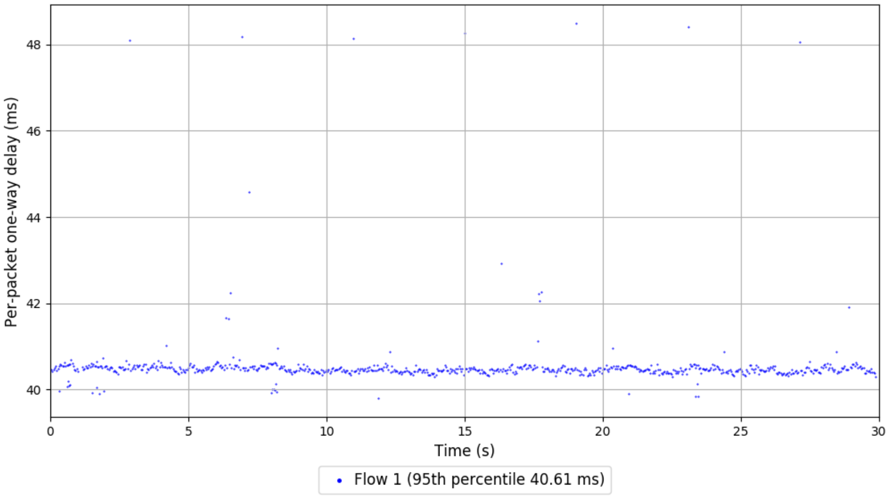




```
Run 2: Statistics of SCReAM

Start at: 2017-12-05 10:20:33
End at: 2017-12-05 10:21:03
Local clock offset: 0.846 ms
Remote clock offset: -5.786 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.614 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.614 ms
Loss rate: 0.26%
```

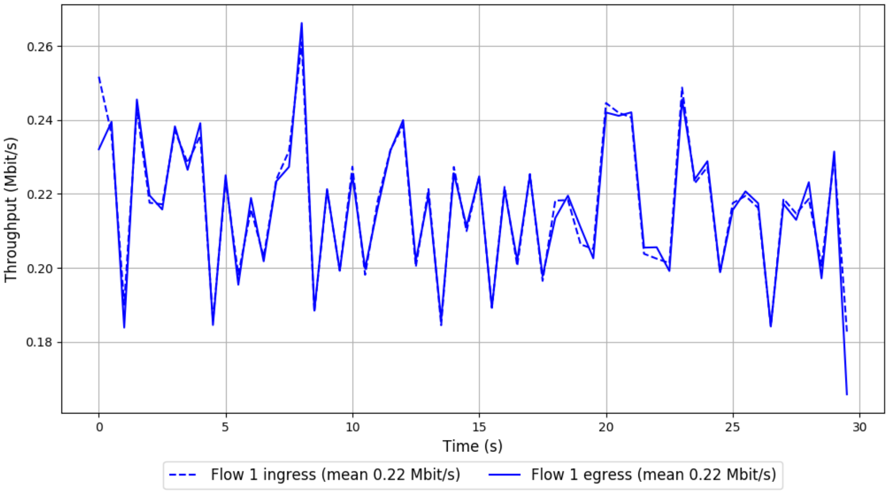
Run 2: Report of SCReAM — Data Link

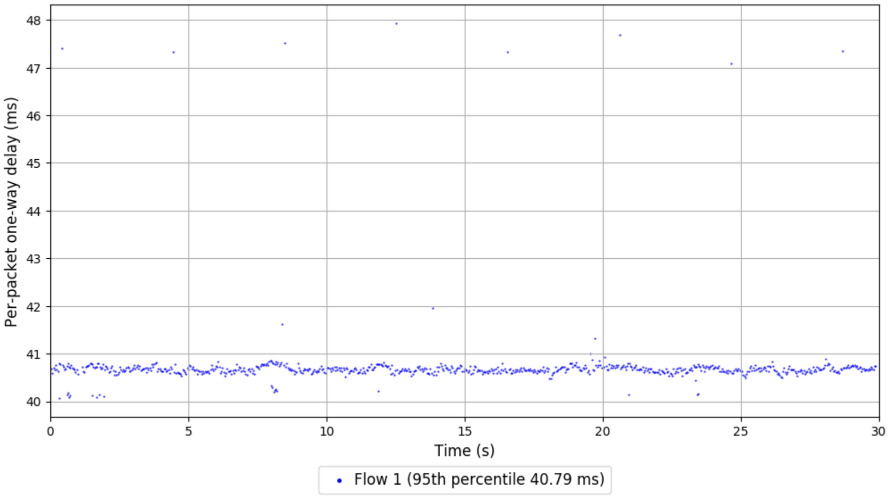




```
Run 3: Statistics of SCReAM

Start at: 2017-12-05 10:37:06
End at: 2017-12-05 10:37:36
Local clock offset: 0.377 ms
Remote clock offset: -6.331 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.794 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.794 ms
Loss rate: 0.26%
```

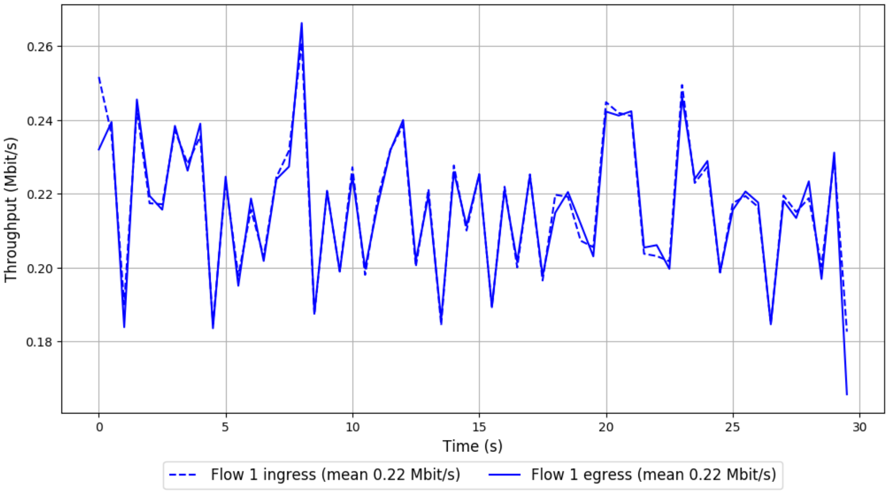
Run 3: Report of SCReAM — Data Link

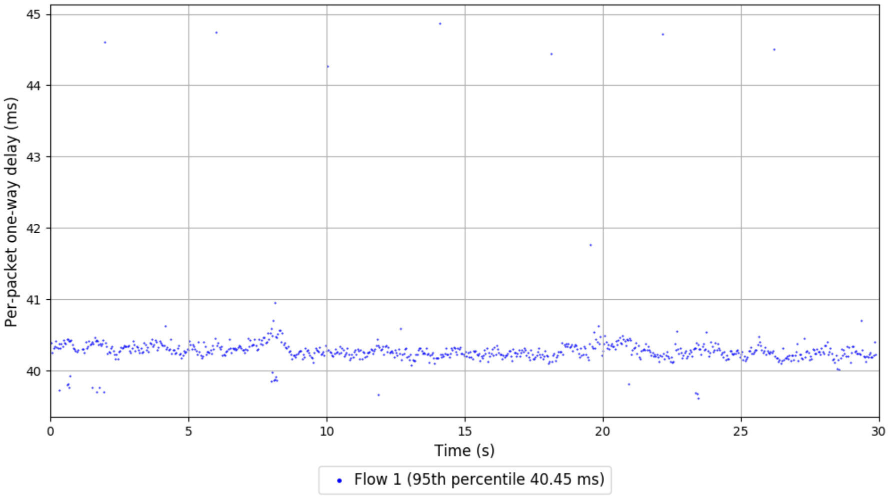




```
Run 4: Statistics of SCReAM

Start at: 2017-12-05 10:53:34
End at: 2017-12-05 10:54:04
Local clock offset: 0.006 ms
Remote clock offset: -7.203 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.445 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.445 ms
Loss rate: 0.26%
```

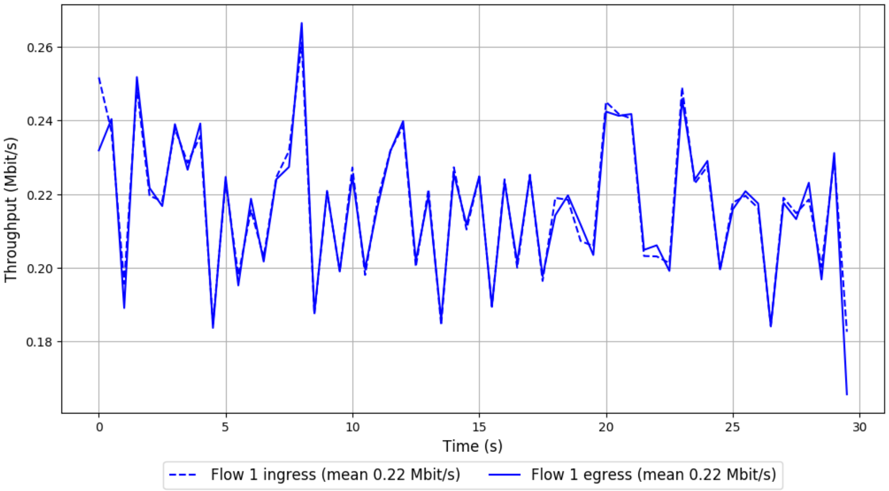
Run 4: Report of SCReAM — Data Link

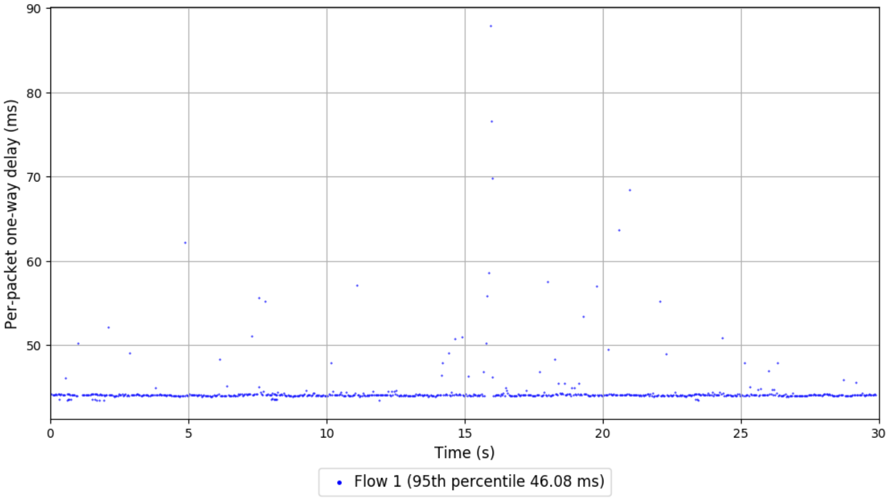




```
Run 5: Statistics of SCReAM

Start at: 2017-12-05 11:10:01
End at: 2017-12-05 11:10:31
Local clock offset: -0.24 ms
Remote clock offset: -10.984 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.079 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.079 ms
Loss rate: 0.26%
```

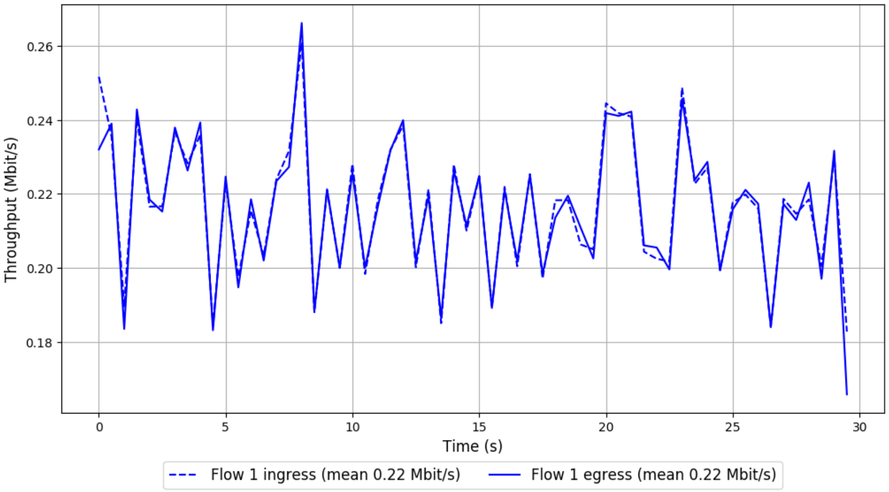
Run 5: Report of SCReAM — Data Link

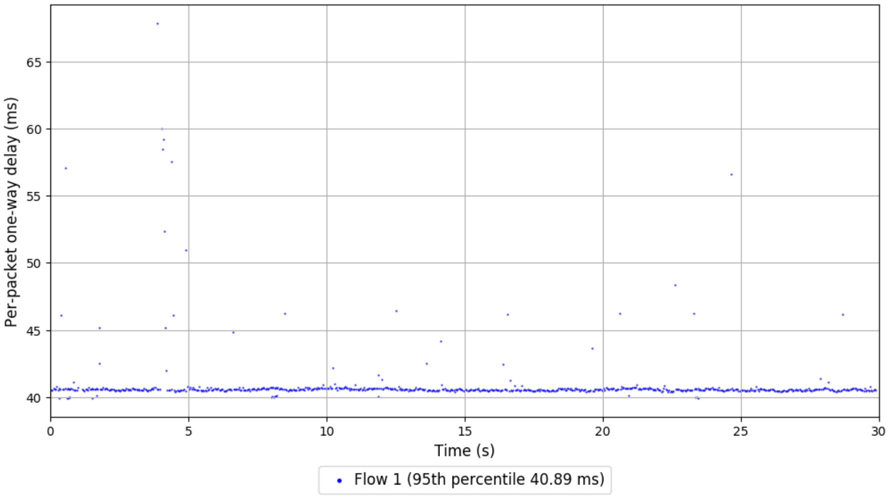




```
Run 6: Statistics of SCReAM

Start at: 2017-12-05 11:26:29
End at: 2017-12-05 11:26:59
Local clock offset: -0.225 ms
Remote clock offset: -7.386 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.892 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.892 ms
Loss rate: 0.26%
```

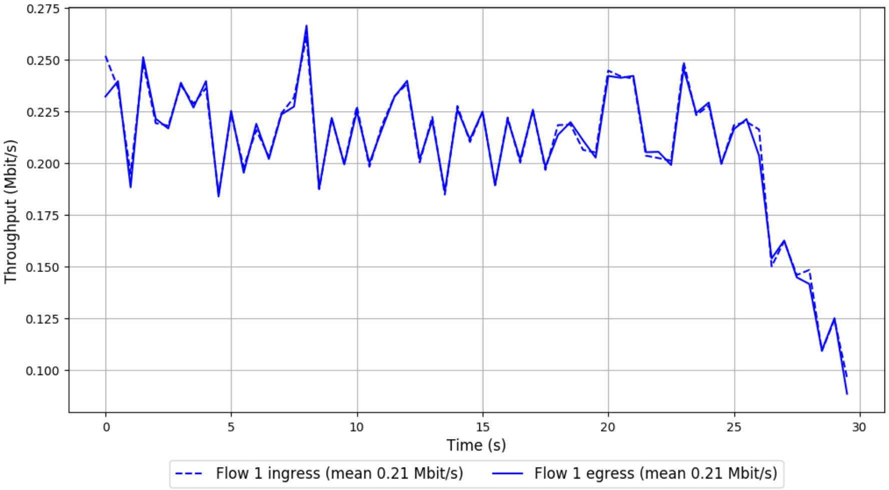
Run 6: Report of SCReAM — Data Link

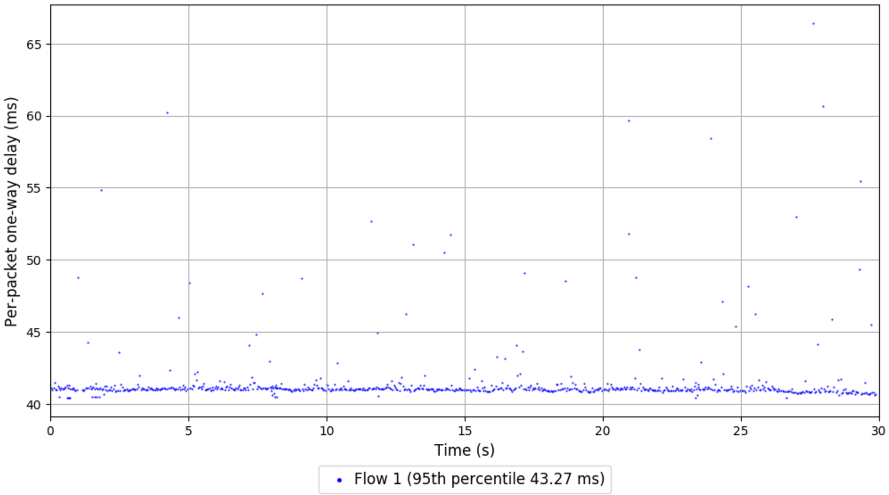




```
Run 7: Statistics of SCReAM

Start at: 2017-12-05 11:43:28
End at: 2017-12-05 11:43:58
Local clock offset: -0.157 ms
Remote clock offset: -8.107 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 43.267 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 43.267 ms
Loss rate: 0.32%
```

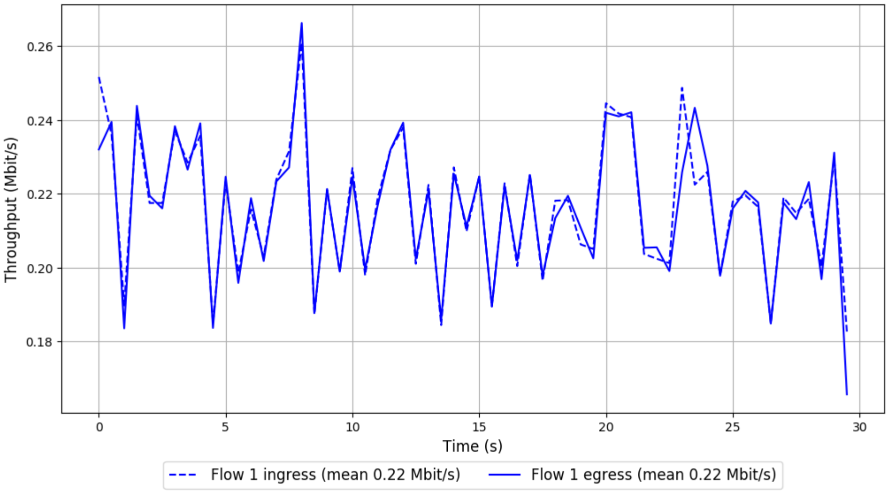
Run 7: Report of SCReAM — Data Link

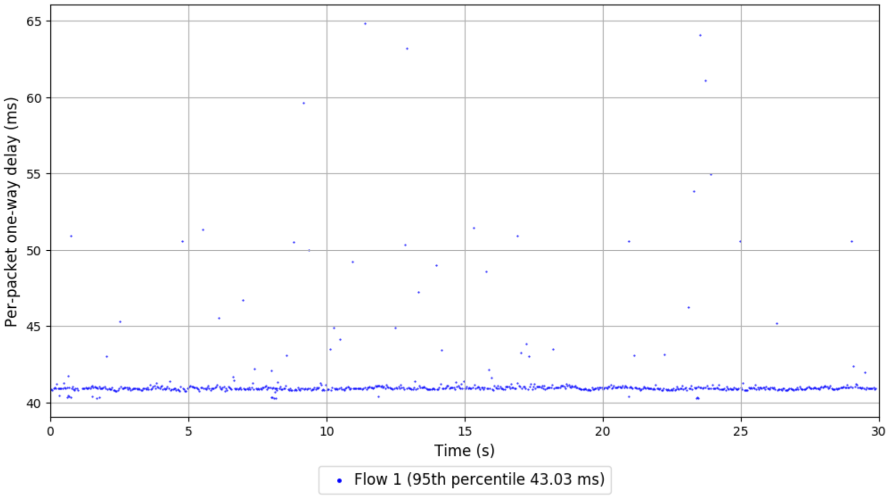




```
Run 8: Statistics of SCReAM

Start at: 2017-12-05 12:01:23
End at: 2017-12-05 12:01:53
Local clock offset: -0.132 ms
Remote clock offset: -8.275 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 43.034 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 43.034 ms
Loss rate: 0.26%
```

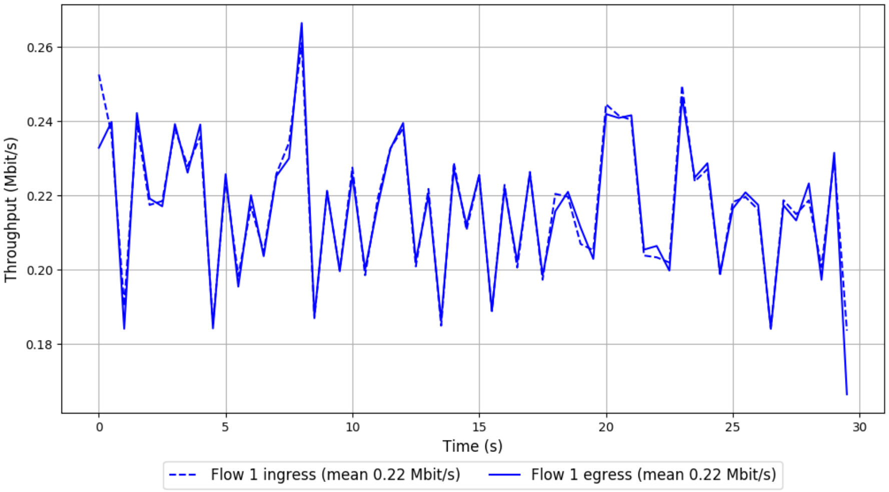
Run 8: Report of SCReAM — Data Link

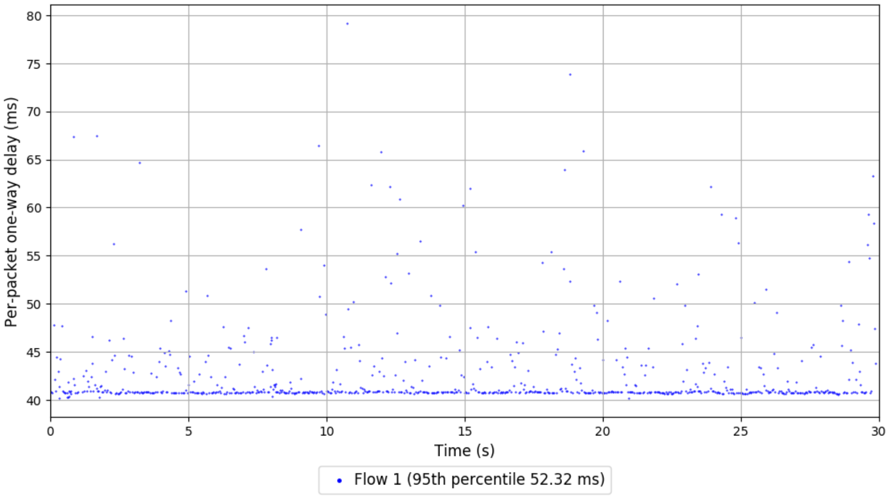




```
Run 9: Statistics of SCReAM

Start at: 2017-12-05 12:18:23
End at: 2017-12-05 12:18:54
Local clock offset: 0.2 ms
Remote clock offset: -7.808 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.324 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.324 ms
Loss rate: 0.26%
```

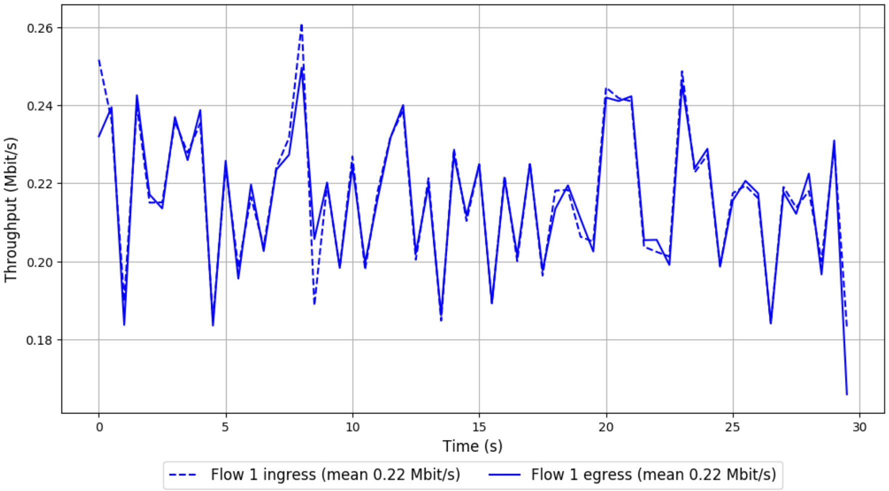
Run 9: Report of SCReAM — Data Link

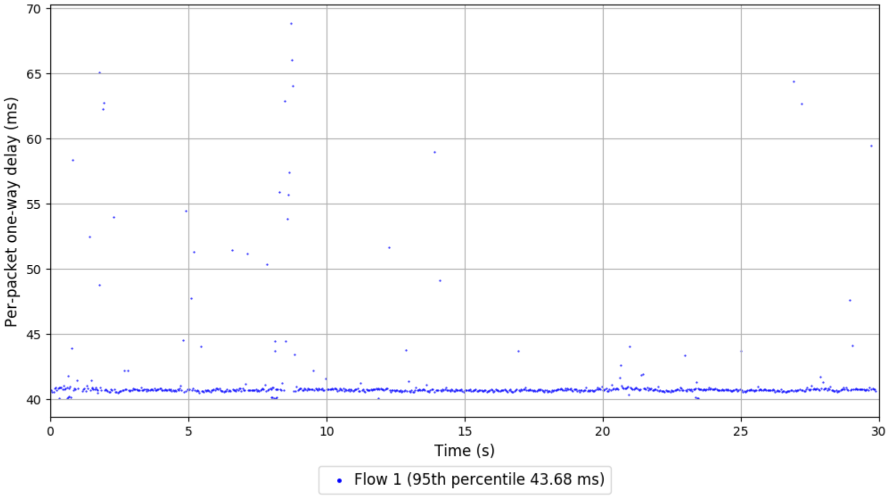




```
Run 10: Statistics of SCReAM

Start at: 2017-12-05 12:35:07
End at: 2017-12-05 12:35:37
Local clock offset: 0.734 ms
Remote clock offset: -6.932 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 43.676 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 43.676 ms
Loss rate: 0.26%
```

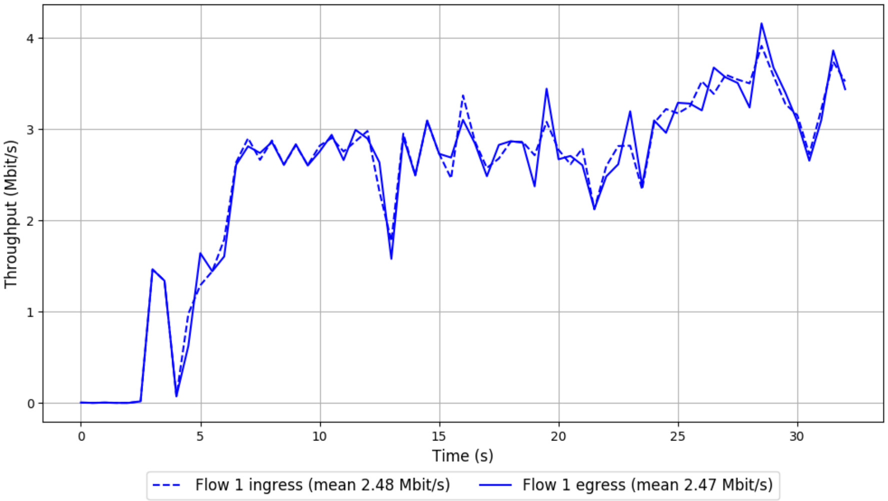
Run 10: Report of SCReAM — Data Link

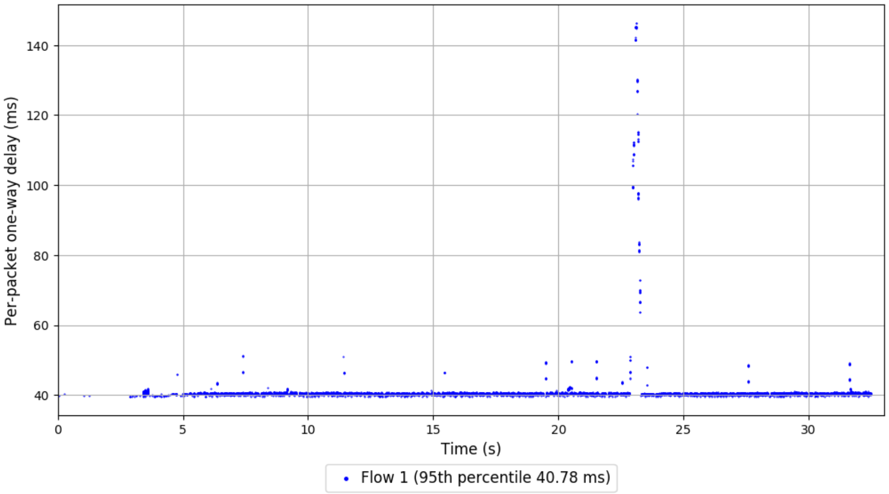




```
Run 1: Statistics of WebRTC media

Start at: 2017-12-05 09:53:48
End at: 2017-12-05 09:54:18
Local clock offset: 0.487 ms
Remote clock offset: -5.849 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.47 Mbit/s
95th percentile per-packet one-way delay: 40.781 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 2.47 Mbit/s
95th percentile per-packet one-way delay: 40.781 ms
Loss rate: 0.32%
```

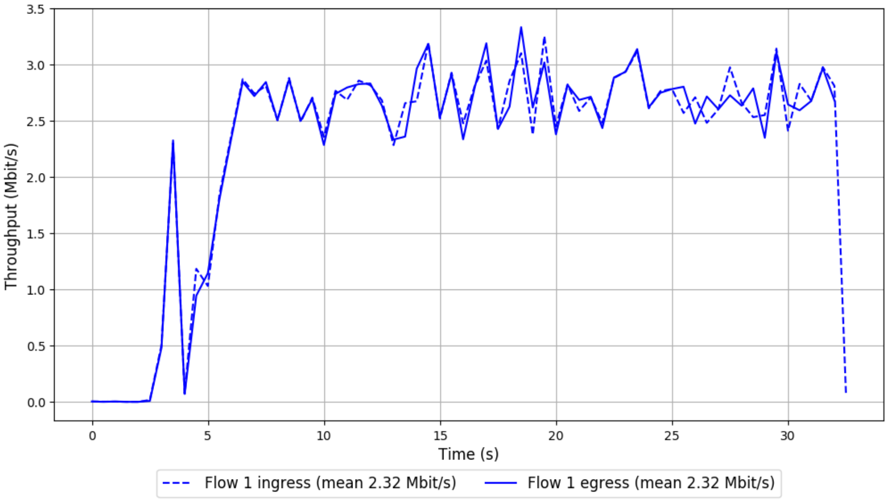
Run 1: Report of WebRTC media — Data Link

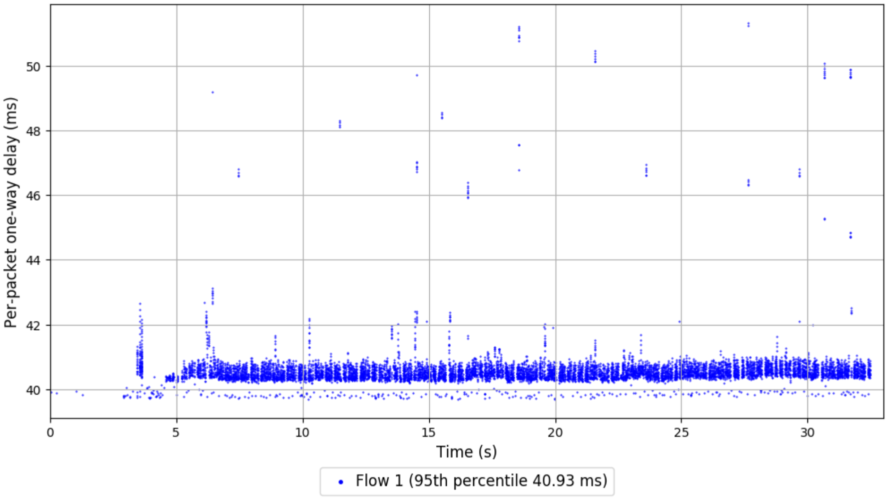




```
Run 2: Statistics of WebRTC media

Start at: 2017-12-05 10:12:11
End at: 2017-12-05 10:12:41
Local clock offset: 0.902 ms
Remote clock offset: -5.783 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 40.928 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 40.928 ms
Loss rate: 0.30%
```

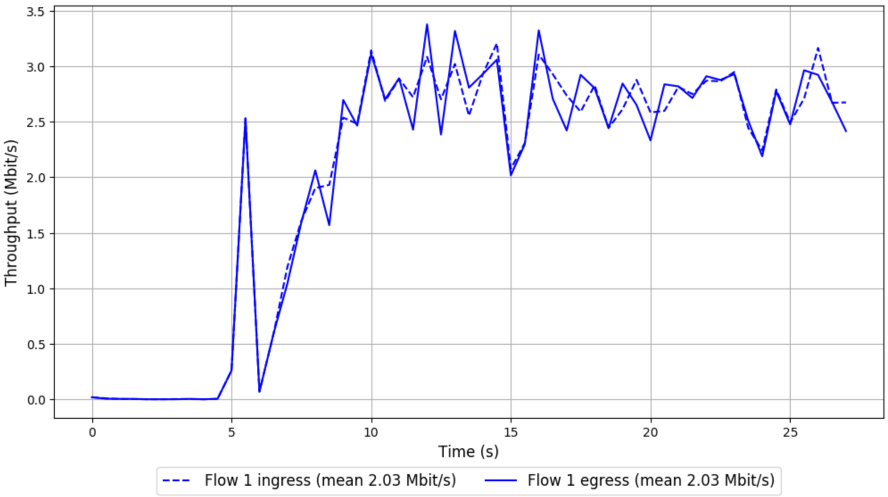
Run 2: Report of WebRTC media — Data Link

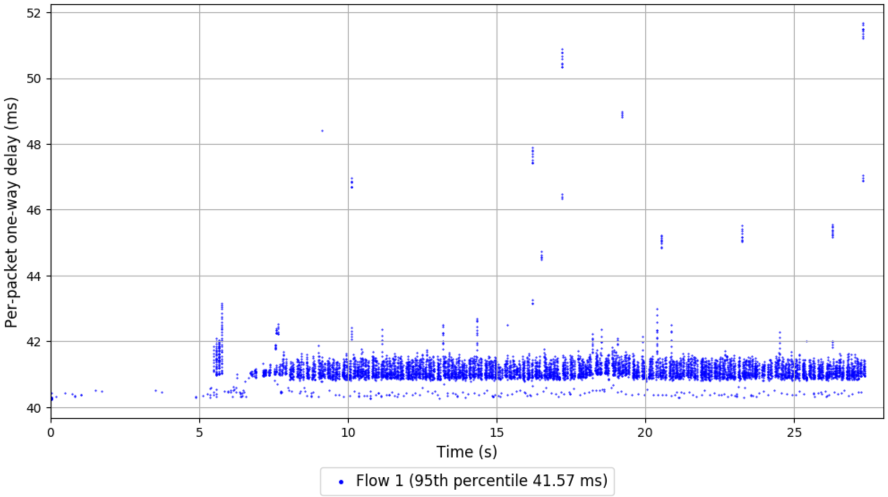




```
Run 3: Statistics of WebRTC media

Start at: 2017-12-05 10:28:52
End at: 2017-12-05 10:29:22
Local clock offset: 0.792 ms
Remote clock offset: -5.961 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 41.570 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 41.570 ms
Loss rate: 0.45%
```

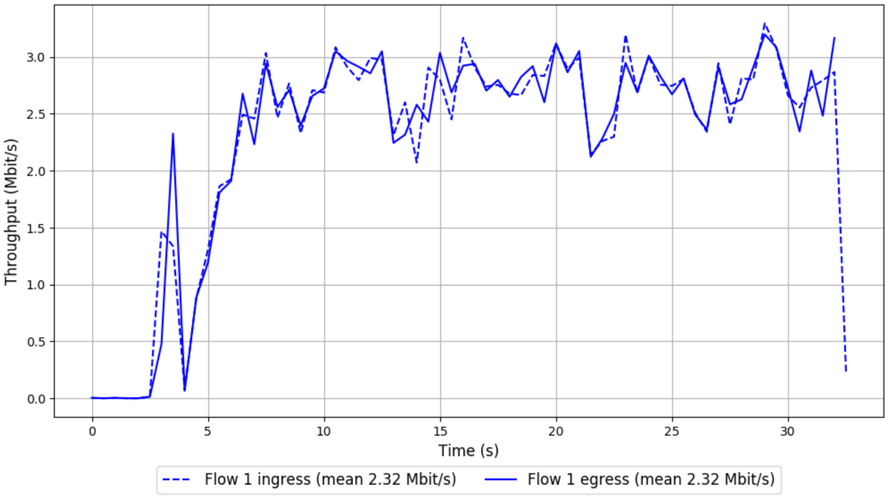
Run 3: Report of WebRTC media — Data Link

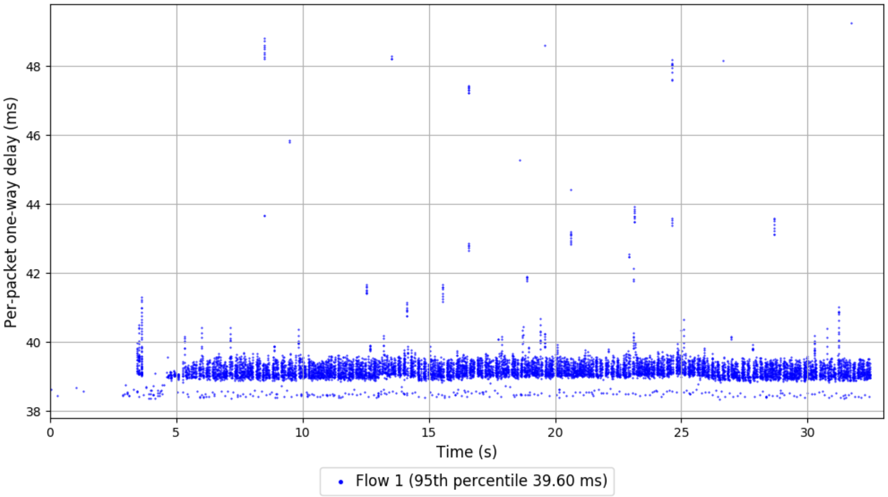




```
Run 4: Statistics of WebRTC media

Start at: 2017-12-05 10:45:20
End at: 2017-12-05 10:45:50
Local clock offset: 0.201 ms
Remote clock offset: -5.208 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 39.597 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 39.597 ms
Loss rate: 0.31%
```

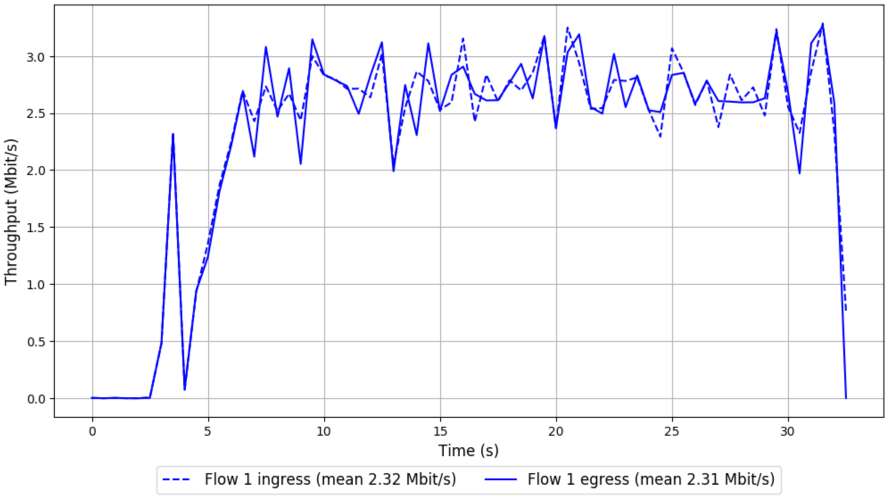
Run 4: Report of WebRTC media — Data Link

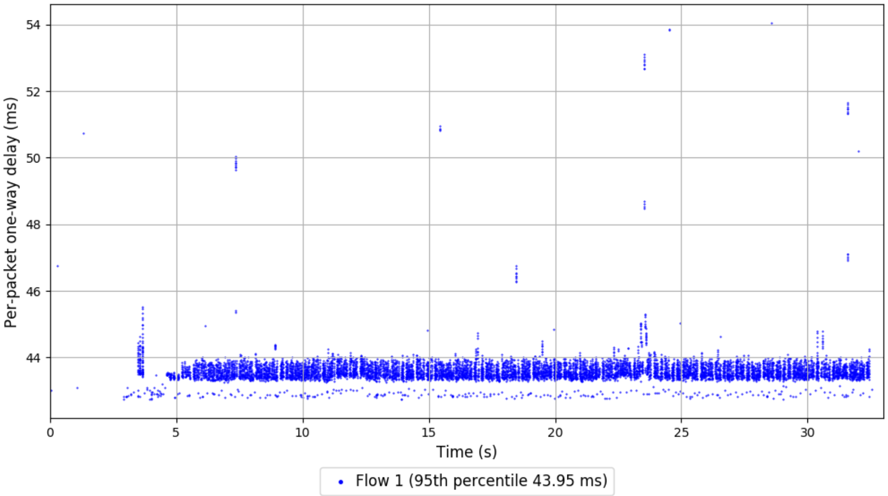




```
Run 5: Statistics of WebRTC media

Start at: 2017-12-05 11:01:49
End at: 2017-12-05 11:02:19
Local clock offset: -0.302 ms
Remote clock offset: -10.81 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 43.950 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 43.950 ms
Loss rate: 0.50%
```

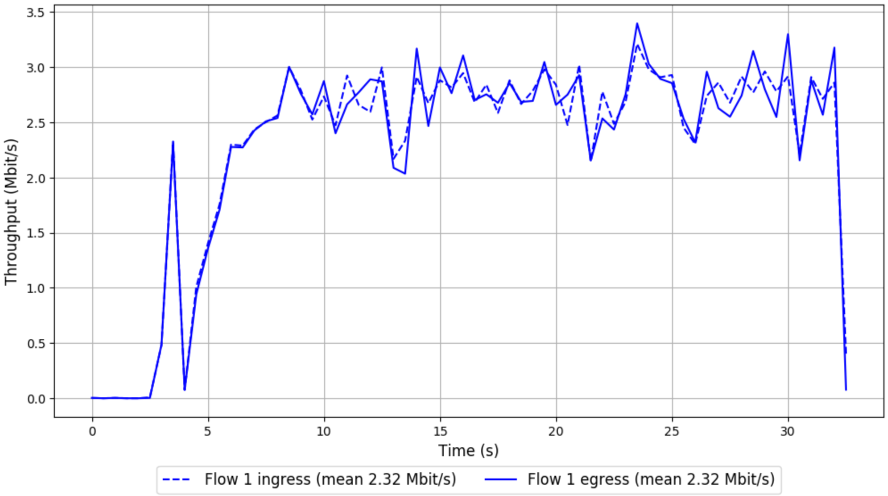
Run 5: Report of WebRTC media — Data Link

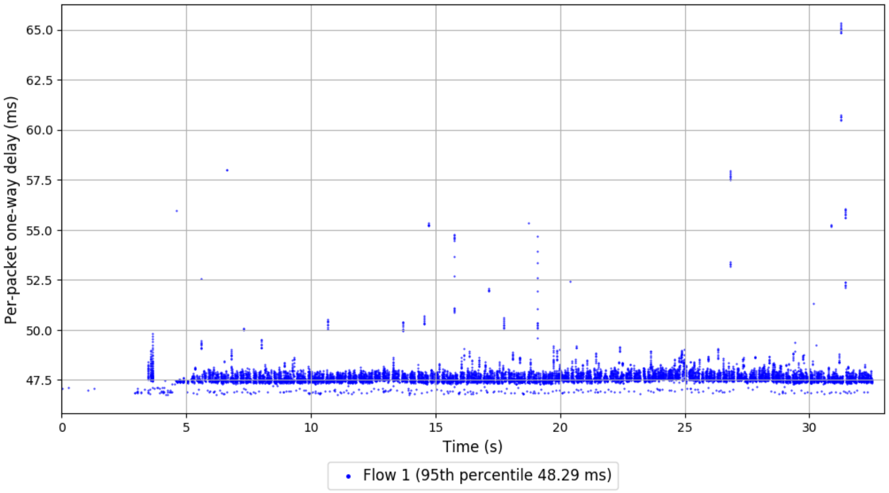




```
Run 6: Statistics of WebRTC media

Start at: 2017-12-05 11:18:16
End at: 2017-12-05 11:18:46
Local clock offset: -0.091 ms
Remote clock offset: -14.574 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 48.292 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 48.292 ms
Loss rate: 0.27%
```

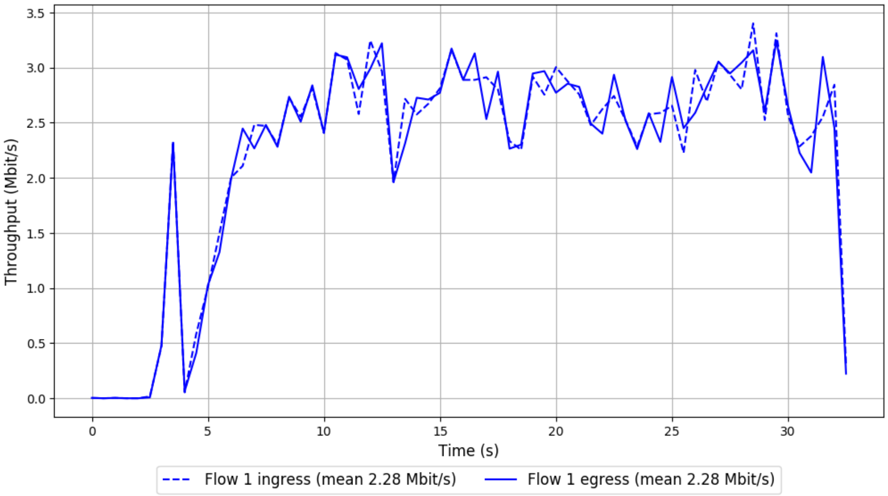
Run 6: Report of WebRTC media — Data Link

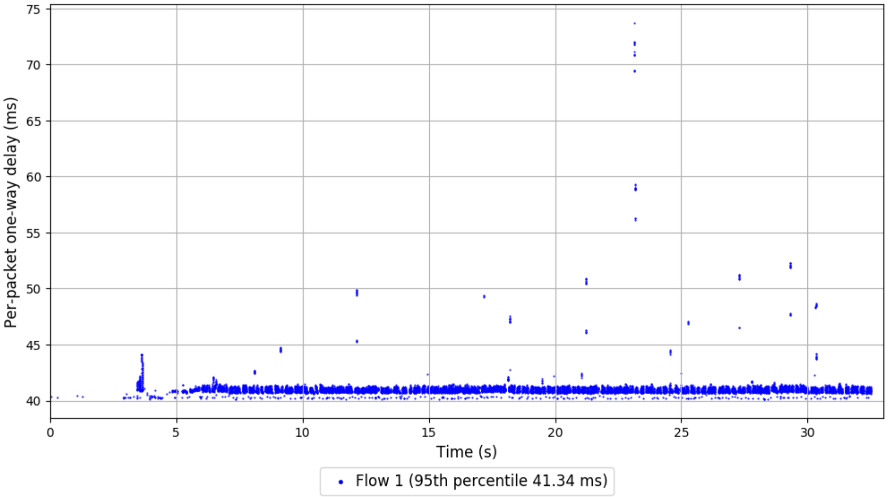




```
Run 7: Statistics of WebRTC media

Start at: 2017-12-05 11:34:40
End at: 2017-12-05 11:35:10
Local clock offset: -0.271 ms
Remote clock offset: -7.567 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 41.345 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 41.345 ms
Loss rate: 0.32%
```

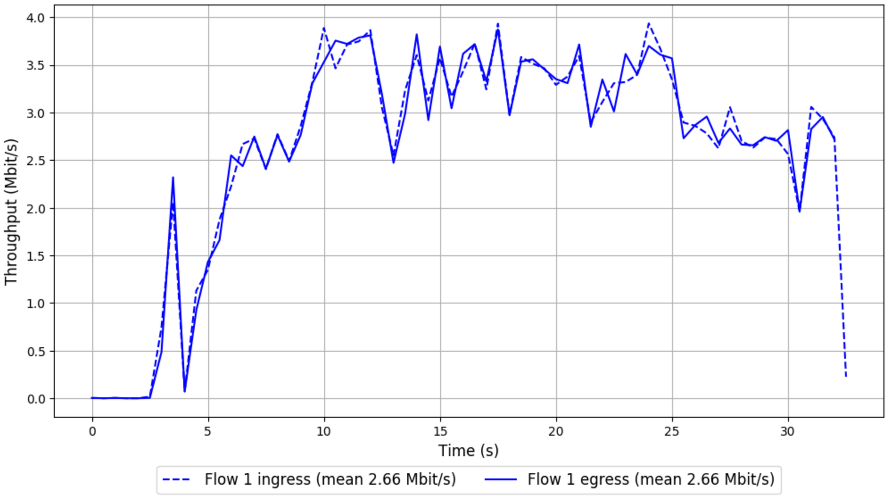
Run 7: Report of WebRTC media — Data Link

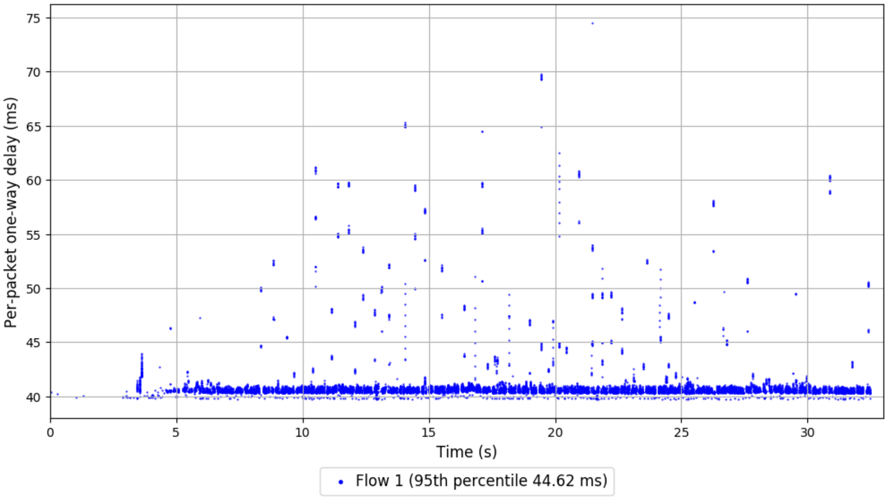




```
Run 8: Statistics of WebRTC media

Start at: 2017-12-05 11:51:57
End at: 2017-12-05 11:52:27
Local clock offset: -0.327 ms
Remote clock offset: -8.704 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.66 Mbit/s
95th percentile per-packet one-way delay: 44.618 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 2.66 Mbit/s
95th percentile per-packet one-way delay: 44.618 ms
Loss rate: 0.33%
```

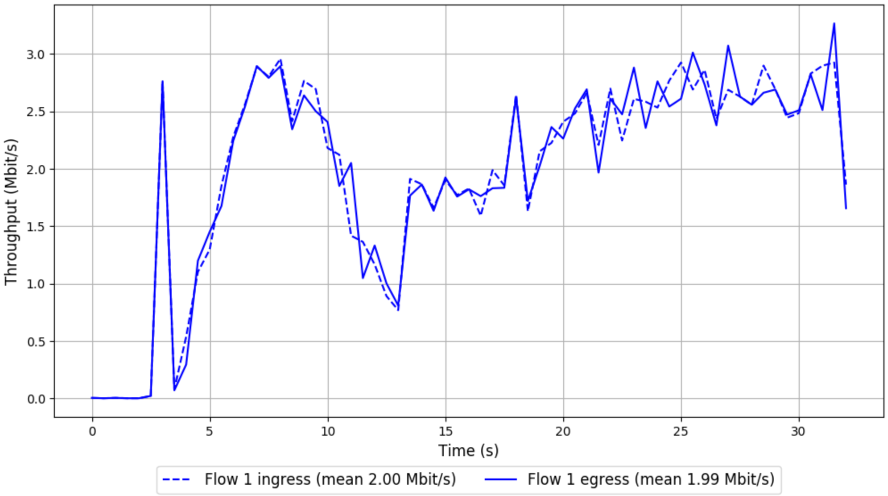
Run 8: Report of WebRTC media — Data Link

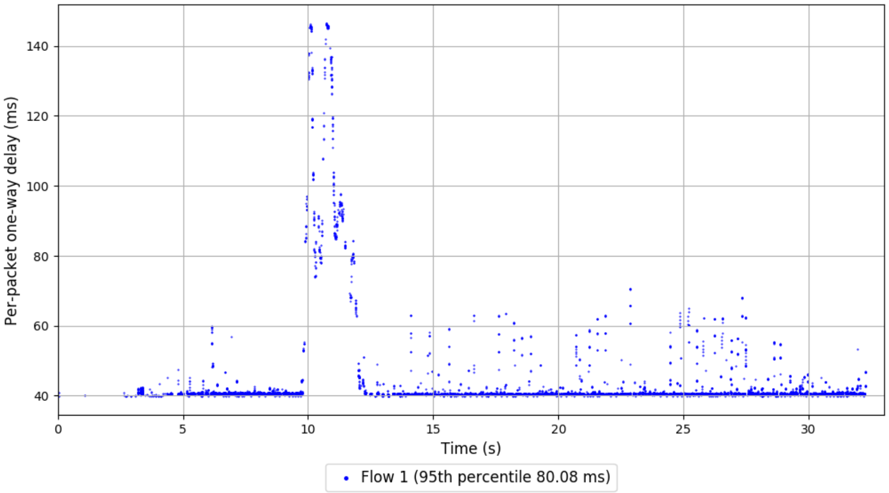




```
Run 9: Statistics of WebRTC media

Start at: 2017-12-05 12:10:05
End at: 2017-12-05 12:10:35
Local clock offset: 0.117 ms
Remote clock offset: -8.063 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 80.077 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 80.077 ms
Loss rate: 0.44%
```

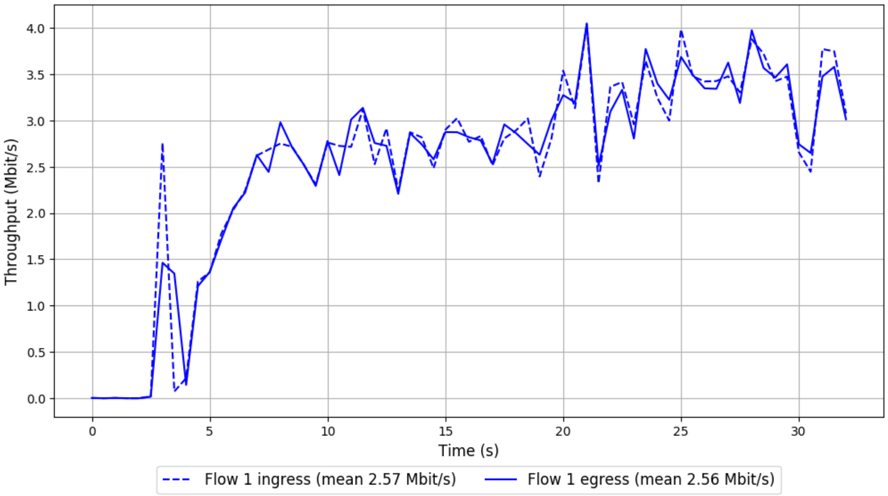
Run 9: Report of WebRTC media — Data Link

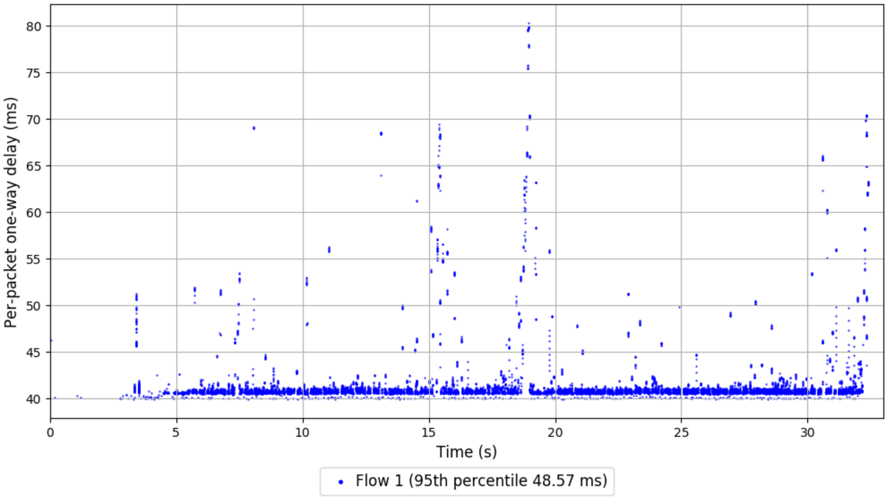




```
Run 10: Statistics of WebRTC media

Start at: 2017-12-05 12:26:43
End at: 2017-12-05 12:27:13
Local clock offset: 0.549 ms
Remote clock offset: -7.594 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.56 Mbit/s
95th percentile per-packet one-way delay: 48.571 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 2.56 Mbit/s
95th percentile per-packet one-way delay: 48.571 ms
Loss rate: 0.38%
```

Run 10: Report of WebRTC media — Data Link





```
Run 1: Statistics of Sprout

Start at: 2017-12-05 09:54:57
End at: 2017-12-05 09:55:27
Local clock offset: 0.655 ms
Remote clock offset: -5.825 ms
```

Run 1: Report of Sprout — Data Link

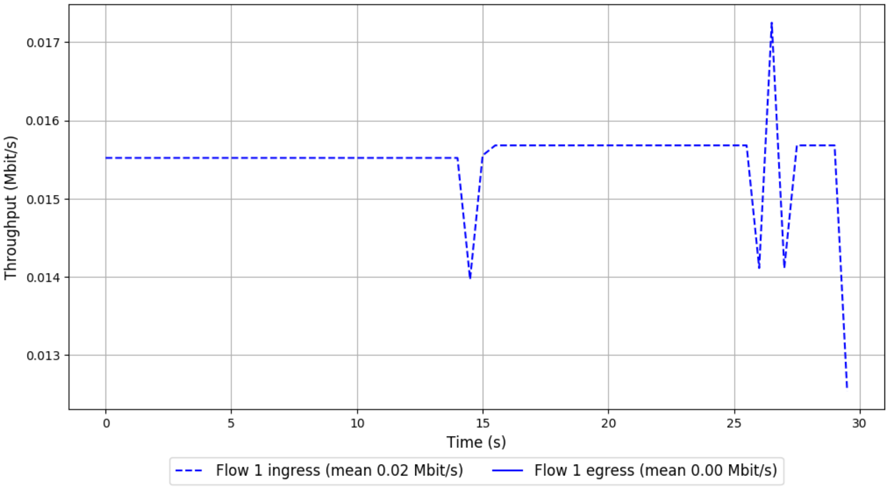
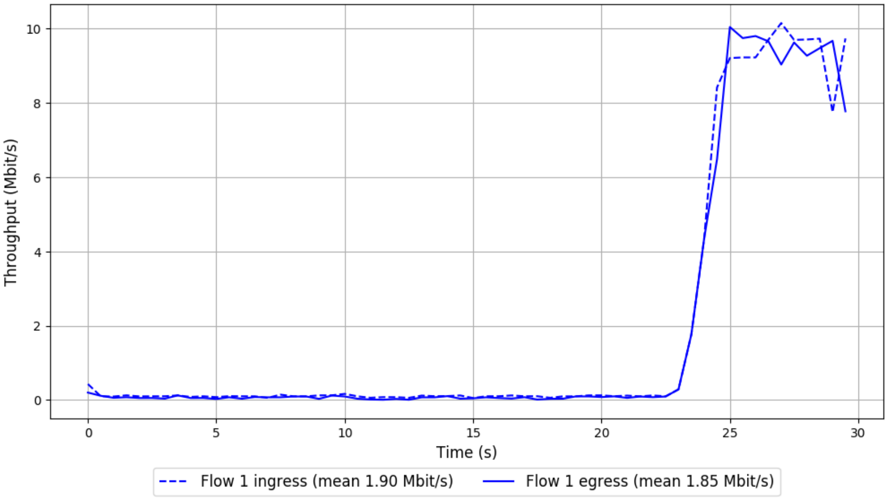
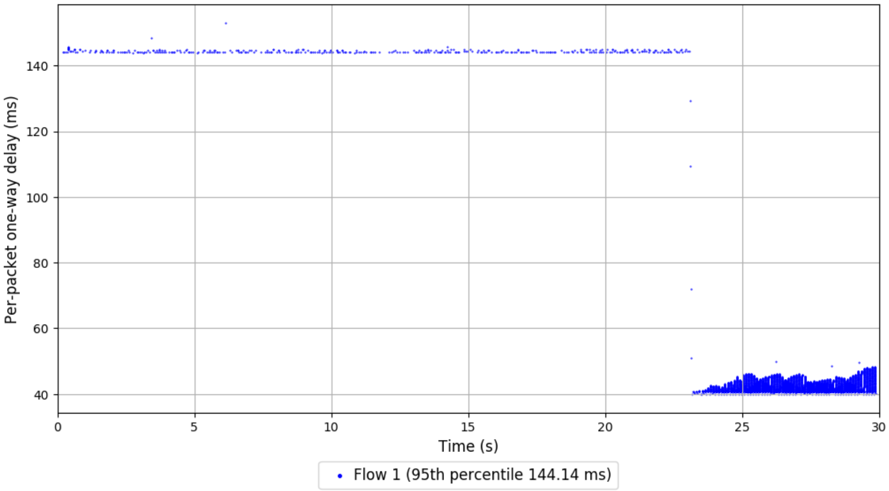


Figure is missing

```
Run 2: Statistics of Sprout

Start at: 2017-12-05 10:13:22
End at: 2017-12-05 10:13:52
Local clock offset: 0.905 ms
Remote clock offset: -5.795 ms

# Below is generated by plot.py at 2017-12-05 15:47:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 144.144 ms
Loss rate: 3.44%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 144.144 ms
Loss rate: 3.44%
```

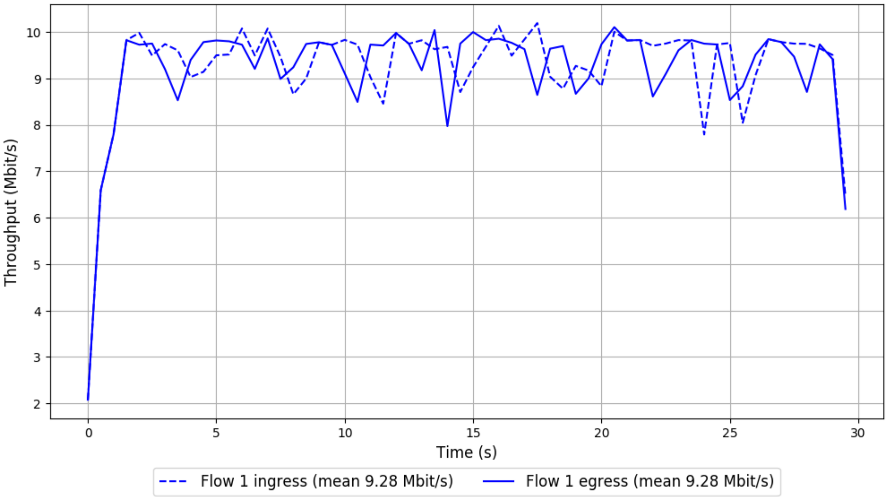
Run 2: Report of Sprout — Data Link

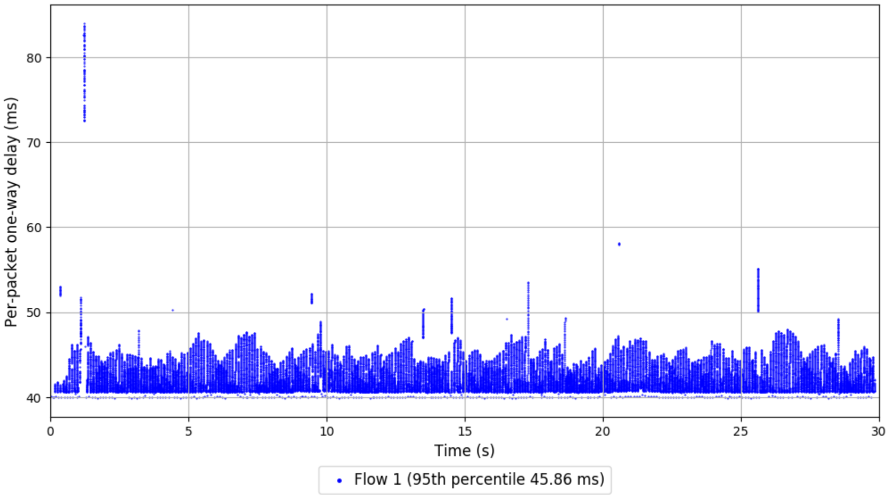




```
Run 3: Statistics of Sprout

Start at: 2017-12-05 10:30:00
End at: 2017-12-05 10:30:30
Local clock offset: 0.616 ms
Remote clock offset: -6.02 ms

# Below is generated by plot.py at 2017-12-05 15:47:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.28 Mbit/s
95th percentile per-packet one-way delay: 45.860 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 9.28 Mbit/s
95th percentile per-packet one-way delay: 45.860 ms
Loss rate: 0.29%
```

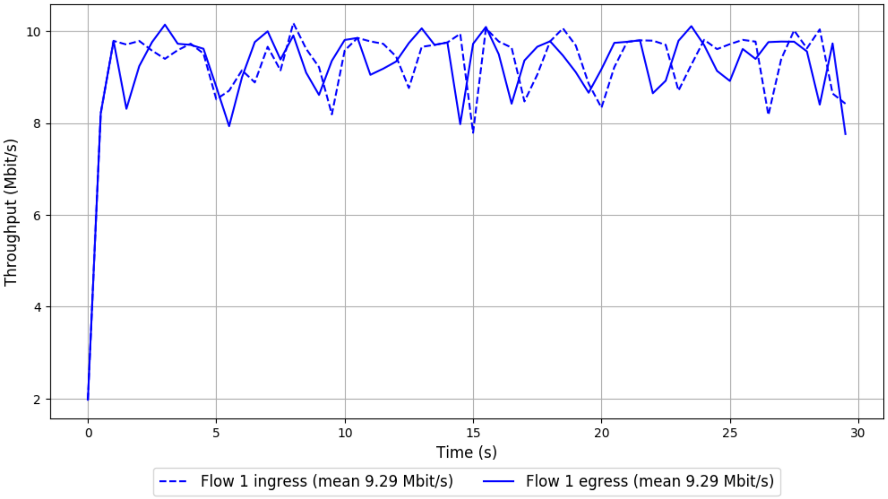
Run 3: Report of Sprout — Data Link

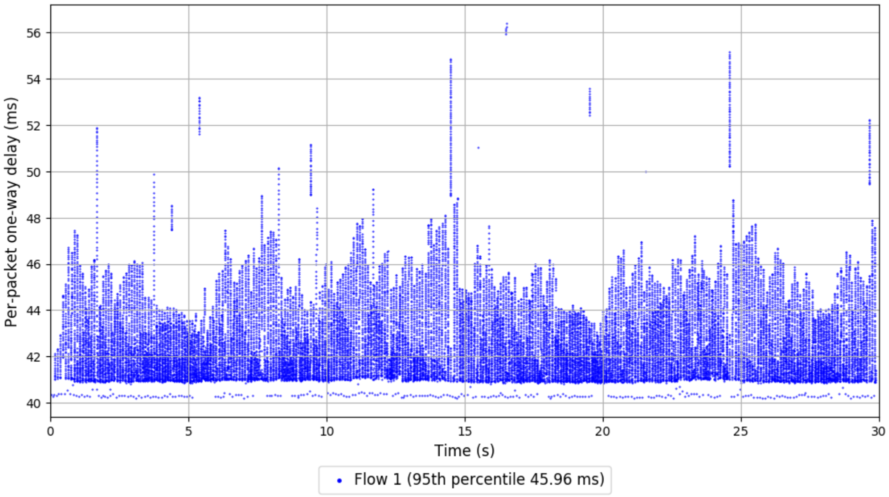




```
Run 4: Statistics of Sprout

Start at: 2017-12-05 10:46:28
End at: 2017-12-05 10:46:58
Local clock offset: 0.141 ms
Remote clock offset: -6.742 ms

# Below is generated by plot.py at 2017-12-05 15:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.29 Mbit/s
95th percentile per-packet one-way delay: 45.961 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 9.29 Mbit/s
95th percentile per-packet one-way delay: 45.961 ms
Loss rate: 0.27%
```

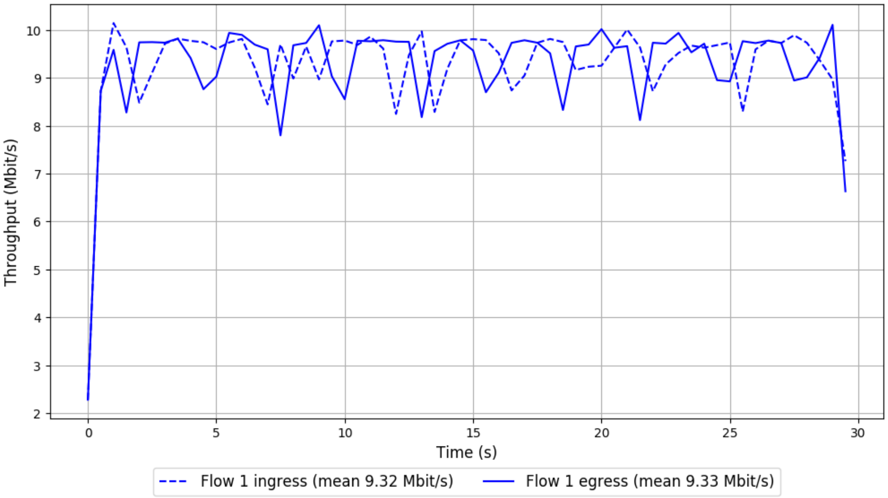
Run 4: Report of Sprout — Data Link

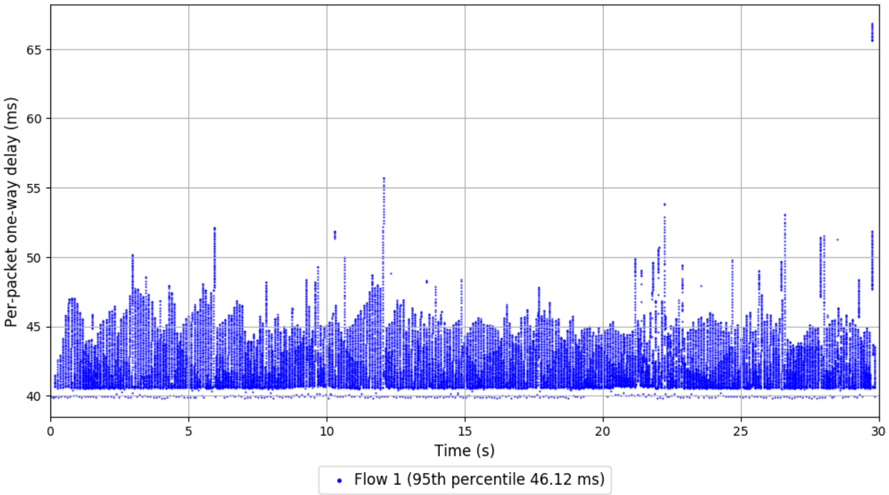




```
Run 5: Statistics of Sprout

Start at: 2017-12-05 11:02:57
End at: 2017-12-05 11:03:27
Local clock offset: -0.01 ms
Remote clock offset: -7.129 ms

# Below is generated by plot.py at 2017-12-05 15:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.33 Mbit/s
95th percentile per-packet one-way delay: 46.118 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 9.33 Mbit/s
95th percentile per-packet one-way delay: 46.118 ms
Loss rate: 0.20%
```

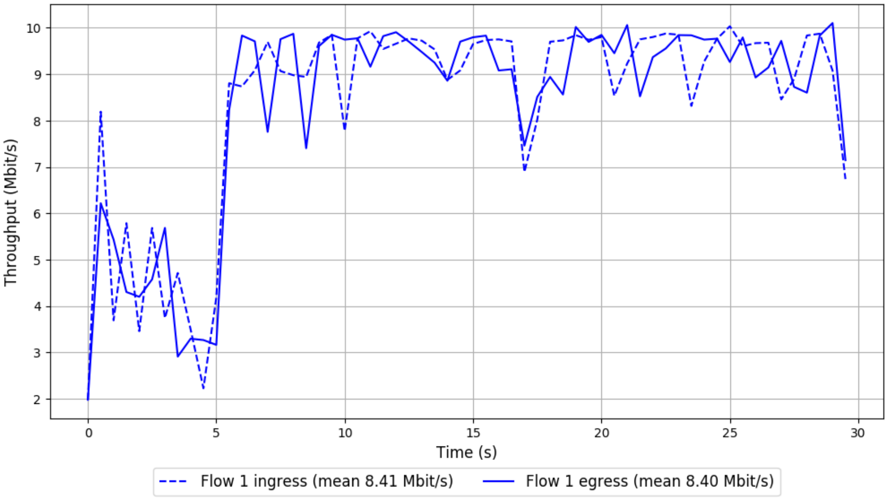
Run 5: Report of Sprout — Data Link

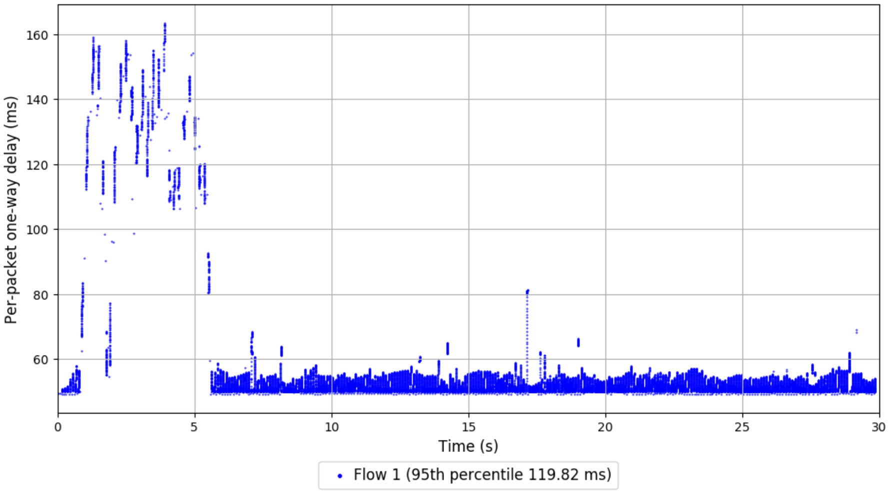




```
Run 6: Statistics of Sprout

Start at: 2017-12-05 11:19:25
End at: 2017-12-05 11:19:55
Local clock offset: -0.066 ms
Remote clock offset: -16.553 ms

# Below is generated by plot.py at 2017-12-05 15:47:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 119.816 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 119.816 ms
Loss rate: 0.36%
```

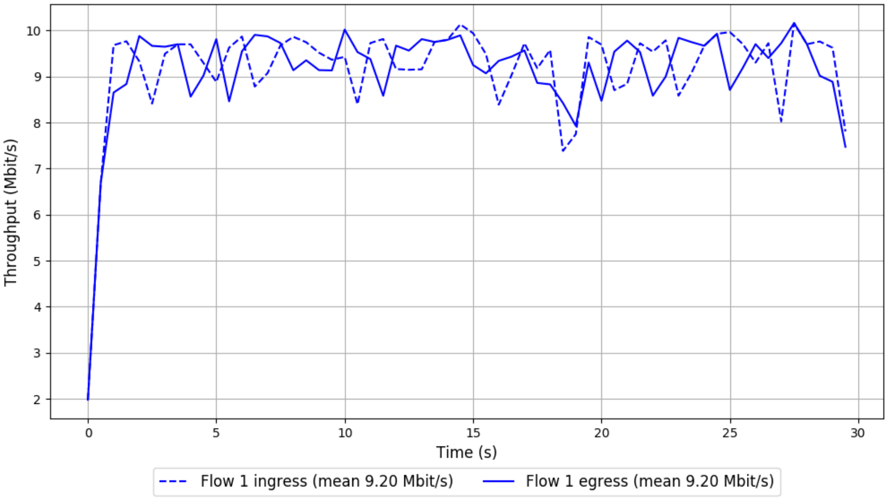
Run 6: Report of Sprout — Data Link

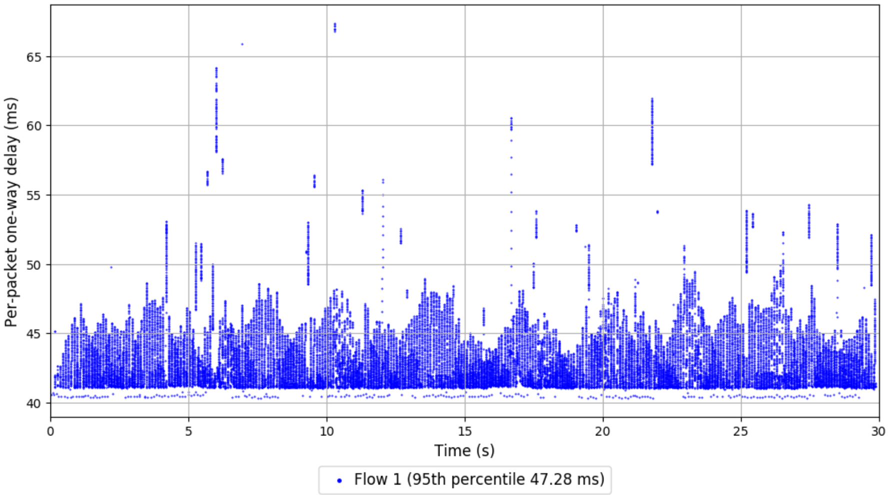




```
Run 7: Statistics of Sprout

Start at: 2017-12-05 11:35:48
End at: 2017-12-05 11:36:18
Local clock offset: -0.099 ms
Remote clock offset: -7.659 ms

# Below is generated by plot.py at 2017-12-05 15:47:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.20 Mbit/s
95th percentile per-packet one-way delay: 47.284 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 9.20 Mbit/s
95th percentile per-packet one-way delay: 47.284 ms
Loss rate: 0.33%
```

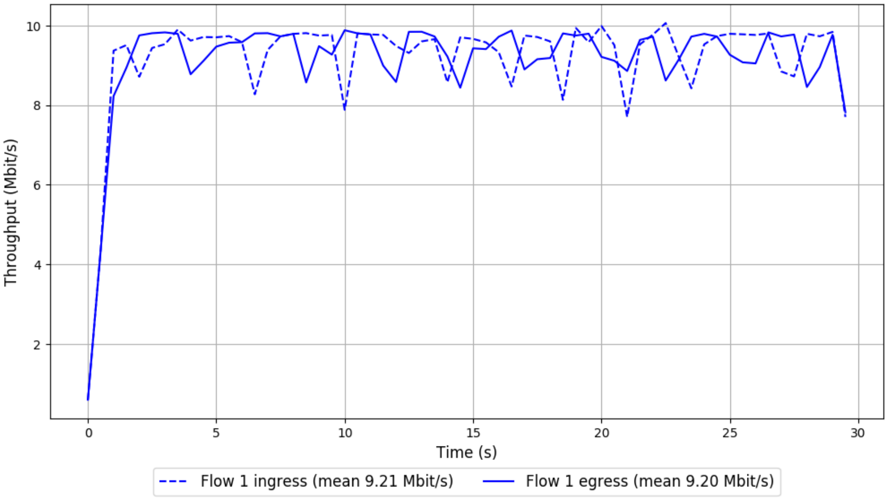
Run 7: Report of Sprout — Data Link

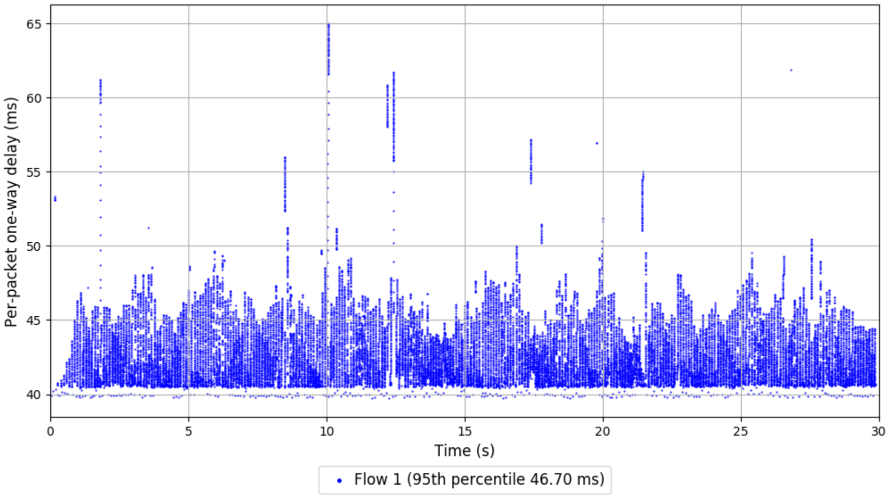




```
Run 8: Statistics of Sprout

Start at: 2017-12-05 11:53:06
End at: 2017-12-05 11:53:36
Local clock offset: -0.44 ms
Remote clock offset: -8.434 ms

# Below is generated by plot.py at 2017-12-05 15:47:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.20 Mbit/s
95th percentile per-packet one-way delay: 46.700 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 9.20 Mbit/s
95th percentile per-packet one-way delay: 46.700 ms
Loss rate: 0.40%
```

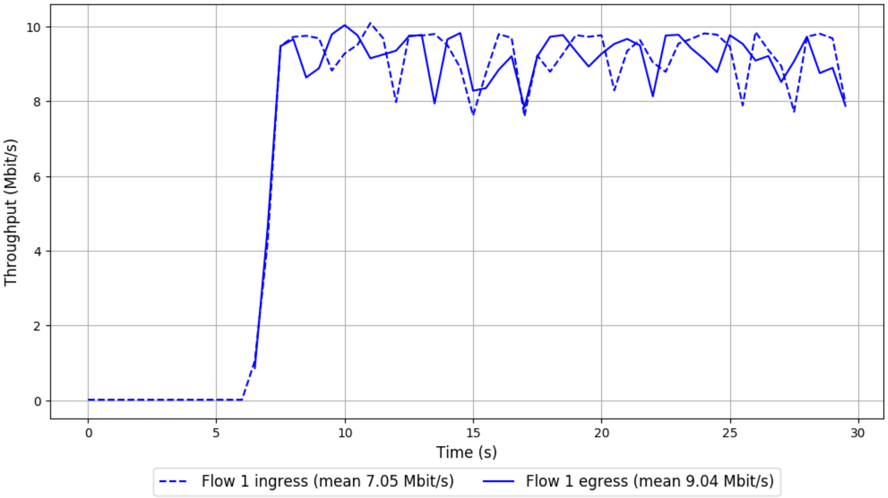
Run 8: Report of Sprout — Data Link

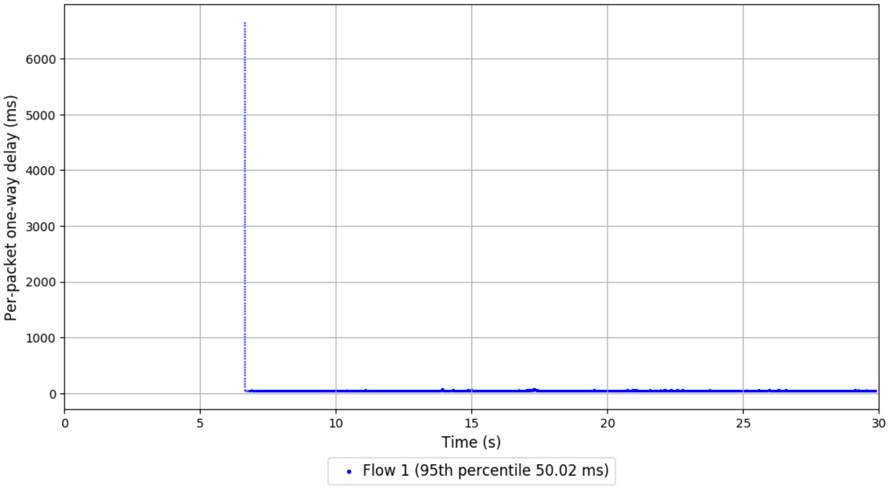




```
Run 9: Statistics of Sprout

Start at: 2017-12-05 12:11:14
End at: 2017-12-05 12:11:44
Local clock offset: 0.144 ms
Remote clock offset: -8.06 ms
```

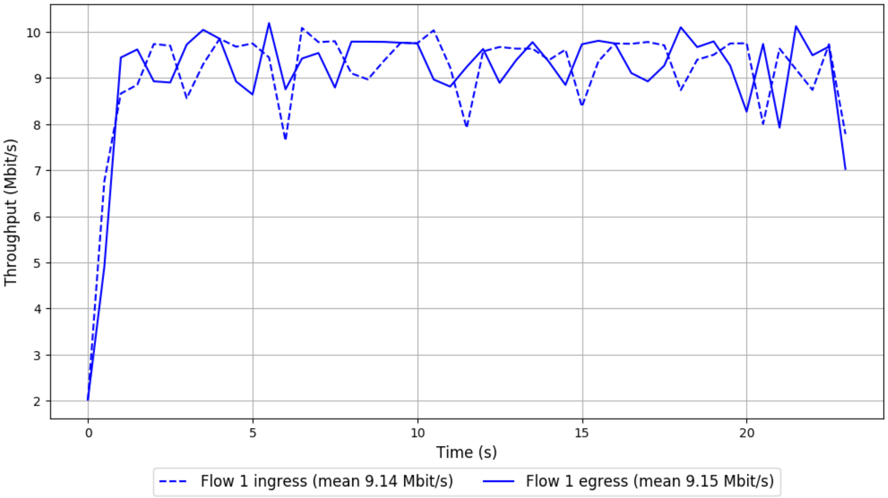
Run 9: Report of Sprout — Data Link

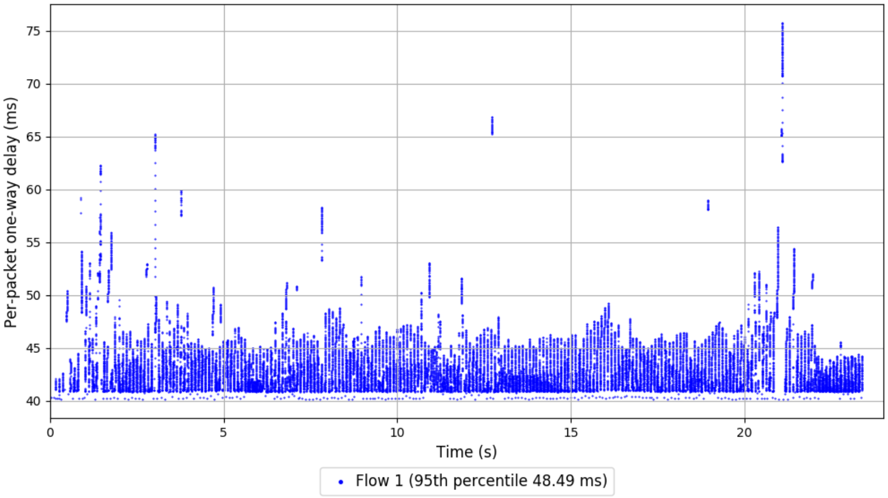




```
Run 10: Statistics of Sprout

Start at: 2017-12-05 12:27:52
End at: 2017-12-05 12:28:22
Local clock offset: 0.558 ms
Remote clock offset: -7.58 ms
```

Run 10: Report of Sprout — Data Link





Run 1: Statistics of TaoVA-100x

```
/home/ubuntu/pantheon_data/2017-12-05T09-47-China-to-AWS-Korea-10-runs/taova_stats_run1.log
```

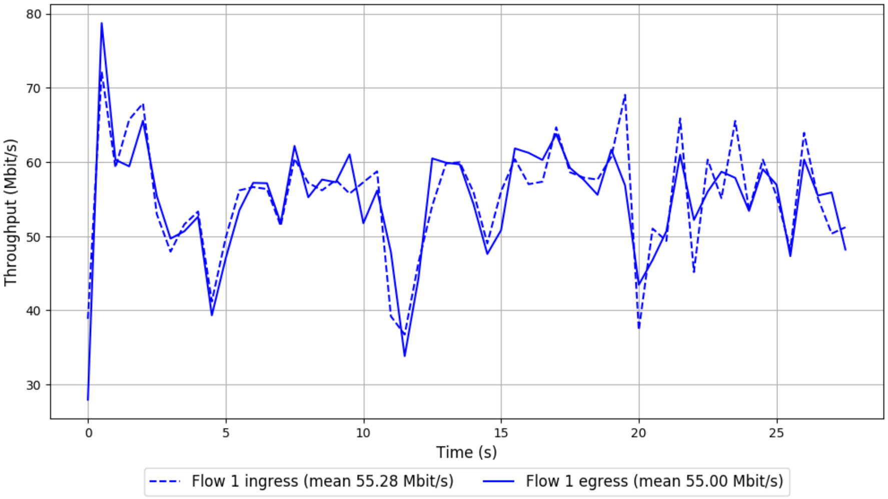
Run 1: Report of TaoVA-100x — Data Link

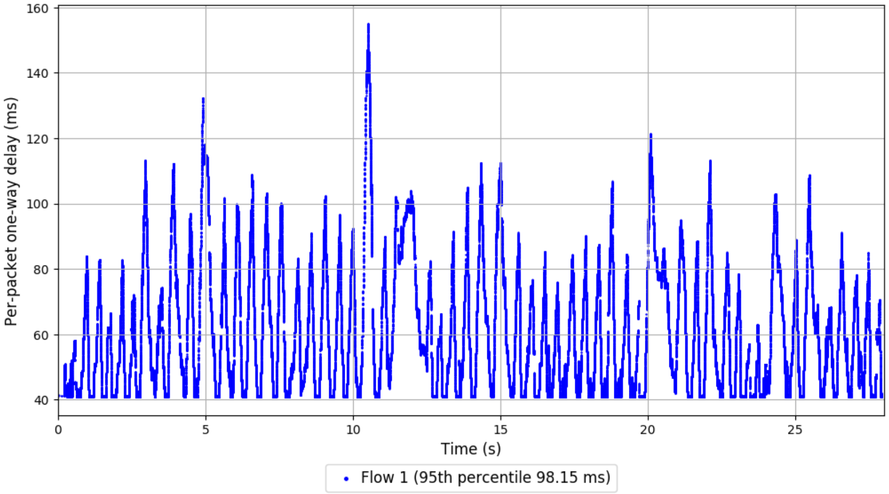
Figure is missing

Figure is missing

```
Run 2: Statistics of TaoVA-100x

Start at: 2017-12-05 10:16:58
End at: 2017-12-05 10:17:28
Local clock offset: 1.049 ms
Remote clock offset: -5.826 ms

# Below is generated by plot.py at 2017-12-05 15:49:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.00 Mbit/s
95th percentile per-packet one-way delay: 98.151 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 55.00 Mbit/s
95th percentile per-packet one-way delay: 98.151 ms
Loss rate: 0.82%
```

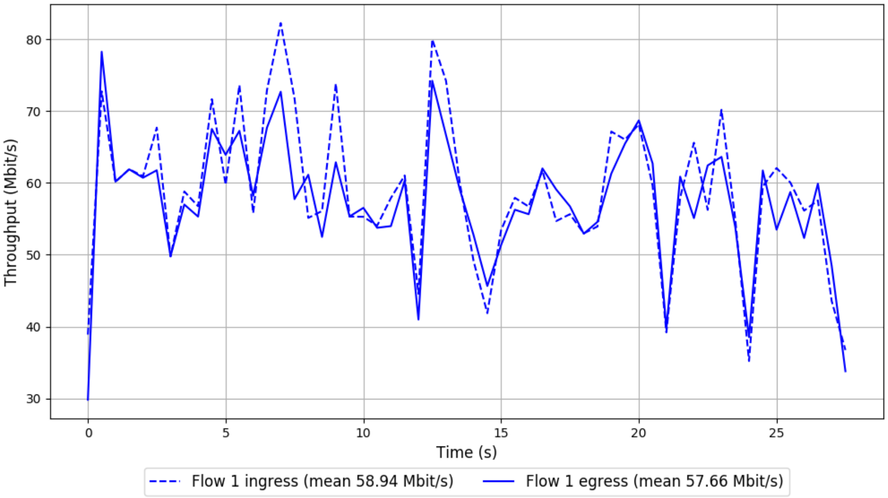
Run 2: Report of TaoVA-100x — Data Link

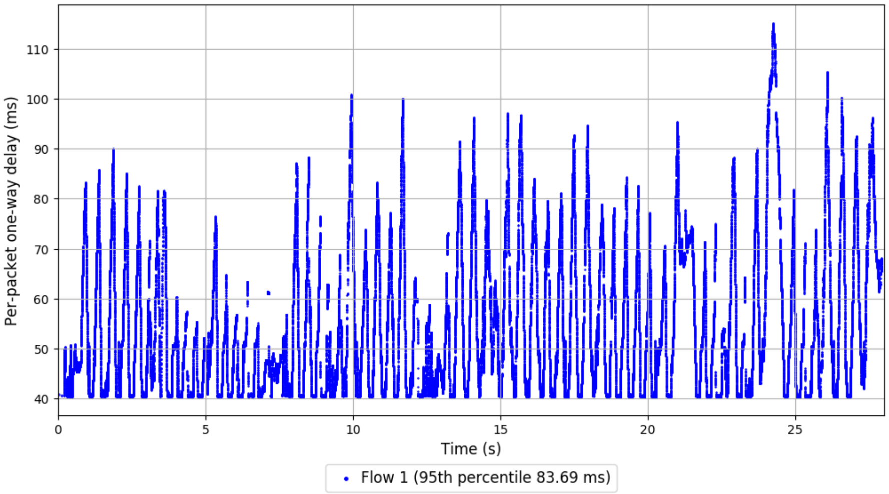




```
Run 3: Statistics of TaoVA-100x

Start at: 2017-12-05 10:33:29
End at: 2017-12-05 10:33:59
Local clock offset: 0.359 ms
Remote clock offset: -6.312 ms

# Below is generated by plot.py at 2017-12-05 15:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.66 Mbit/s
95th percentile per-packet one-way delay: 83.692 ms
Loss rate: 2.48%
-- Flow 1:
Average throughput: 57.66 Mbit/s
95th percentile per-packet one-way delay: 83.692 ms
Loss rate: 2.48%
```

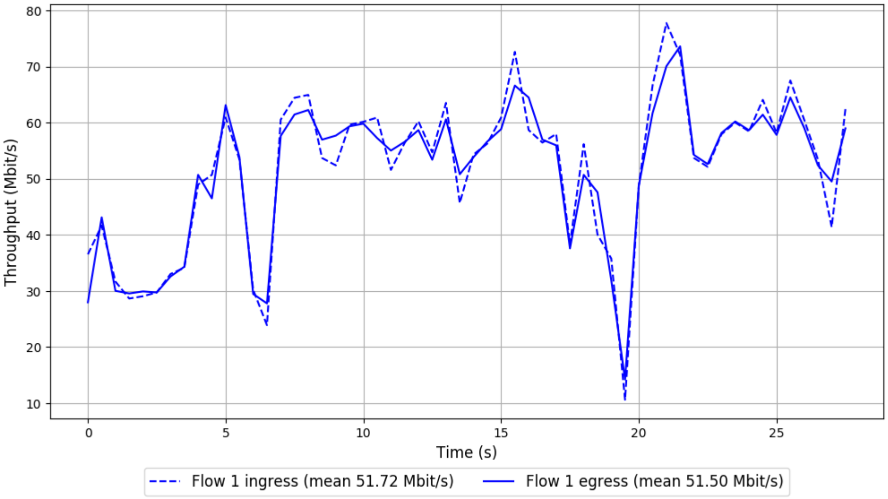
Run 3: Report of TaoVA-100x — Data Link

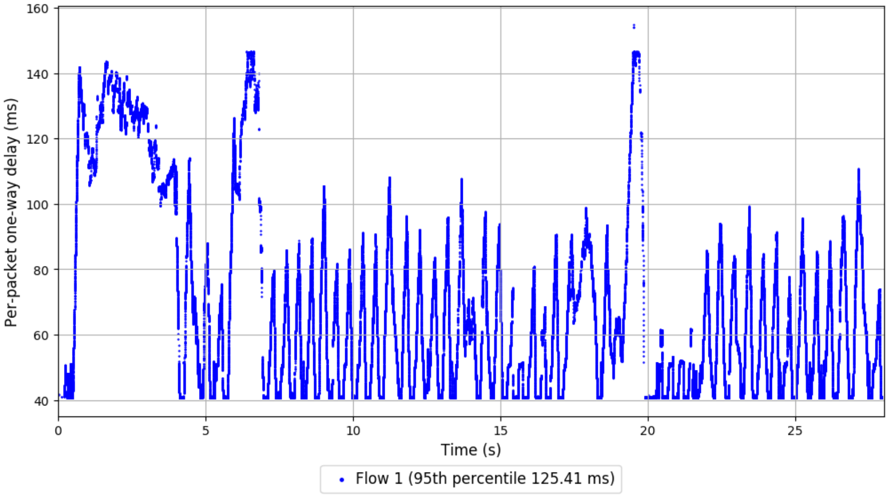




```
Run 4: Statistics of TaoVA-100x

Start at: 2017-12-05 10:49:58
End at: 2017-12-05 10:50:28
Local clock offset: 0.189 ms
Remote clock offset: -6.819 ms

# Below is generated by plot.py at 2017-12-05 15:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.50 Mbit/s
95th percentile per-packet one-way delay: 125.408 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 51.50 Mbit/s
95th percentile per-packet one-way delay: 125.408 ms
Loss rate: 0.74%
```

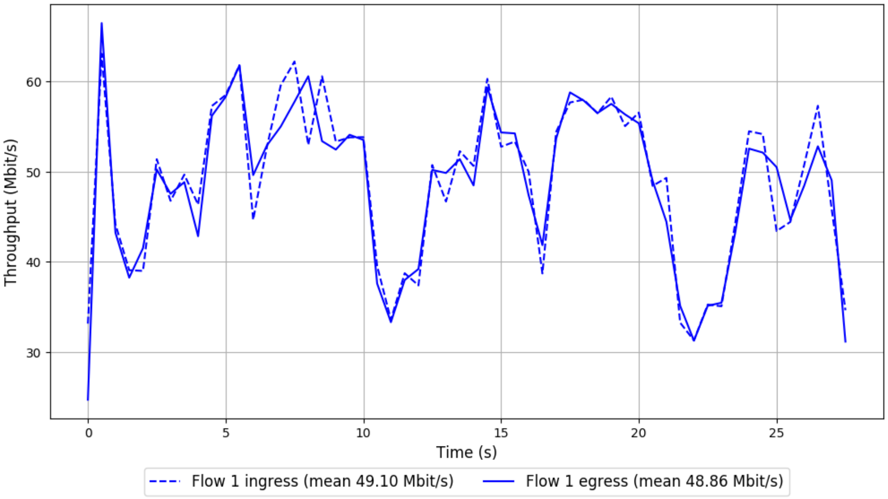
Run 4: Report of TaoVA-100x — Data Link

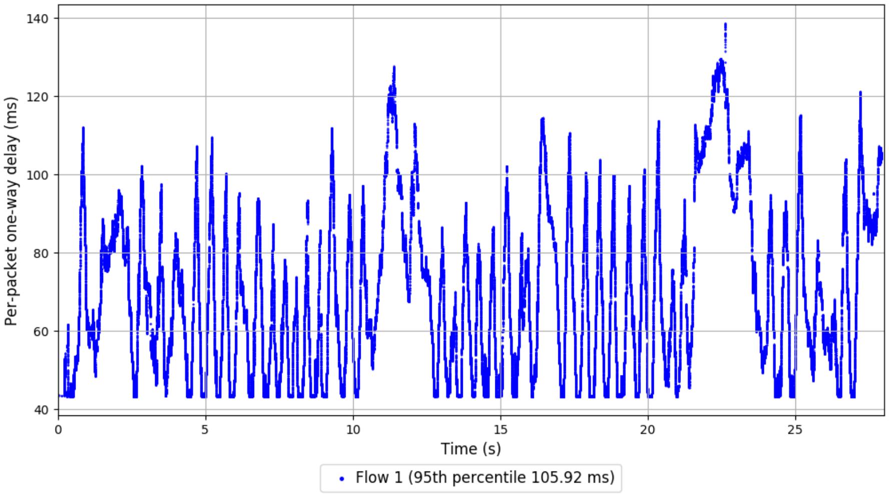




```
Run 5: Statistics of TaoVA-100x

Start at: 2017-12-05 11:06:27
End at: 2017-12-05 11:06:57
Local clock offset: -0.175 ms
Remote clock offset: -9.908 ms

# Below is generated by plot.py at 2017-12-05 15:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.86 Mbit/s
95th percentile per-packet one-way delay: 105.921 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 48.86 Mbit/s
95th percentile per-packet one-way delay: 105.921 ms
Loss rate: 0.78%
```

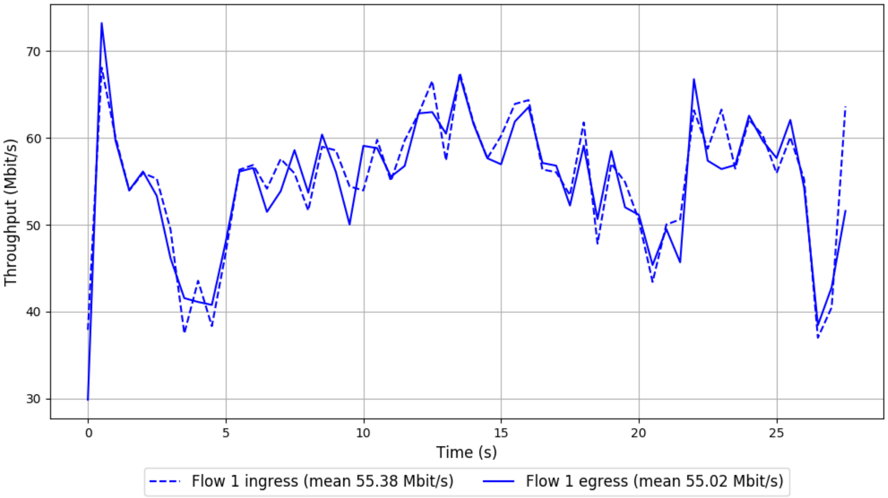
Run 5: Report of TaoVA-100x — Data Link

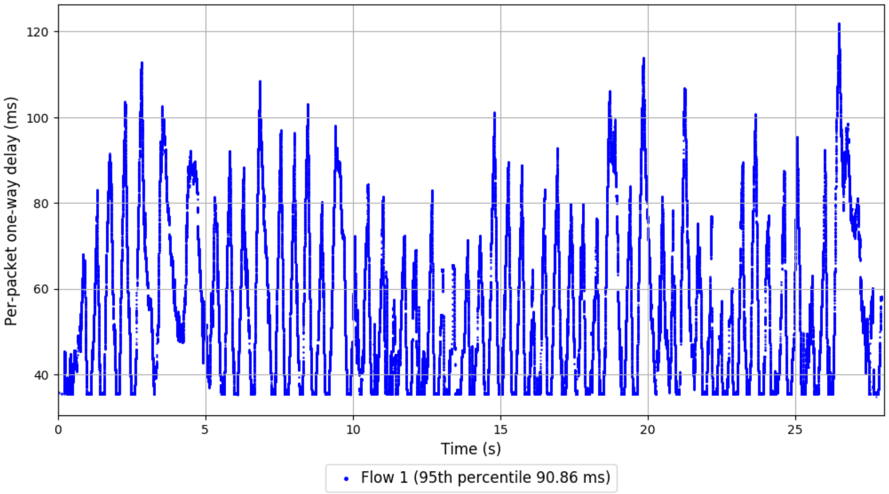




```
Run 6: Statistics of TaoVA-100x

Start at: 2017-12-05 11:22:54
End at: 2017-12-05 11:23:24
Local clock offset: -0.341 ms
Remote clock offset: -2.416 ms

# Below is generated by plot.py at 2017-12-05 15:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.02 Mbit/s
95th percentile per-packet one-way delay: 90.862 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 55.02 Mbit/s
95th percentile per-packet one-way delay: 90.862 ms
Loss rate: 0.96%
```

Run 6: Report of TaoVA-100x — Data Link





```
Run 7: Statistics of TaoVA-100x

Start at: 2017-12-05 11:39:17
End at: 2017-12-05 11:39:47
Local clock offset: -0.096 ms
Remote clock offset: -7.942 ms
```

Run 7: Report of TaoVA-100x — Data Link

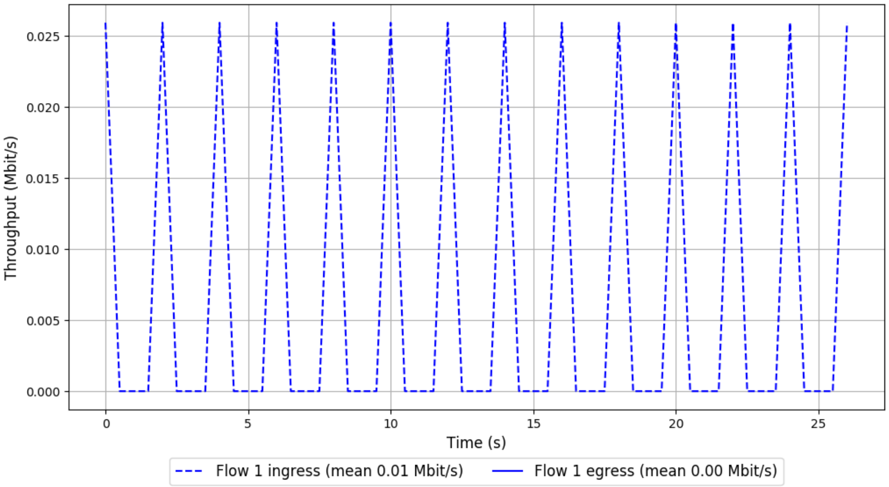
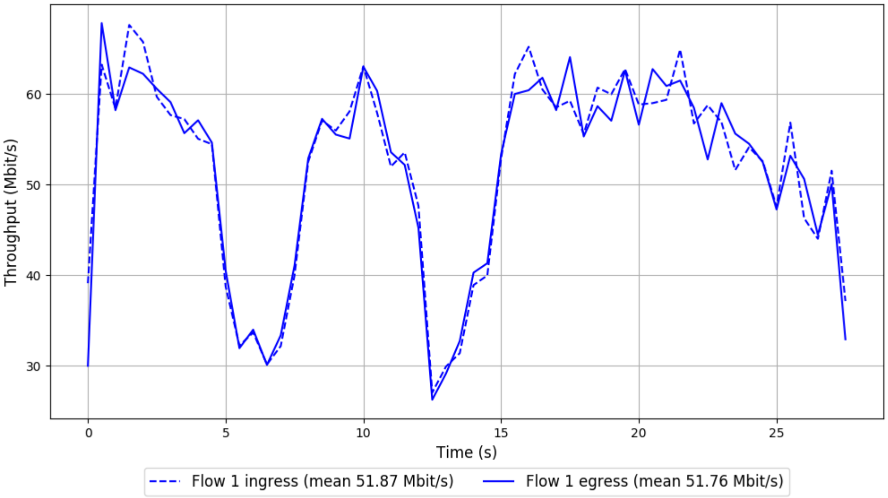
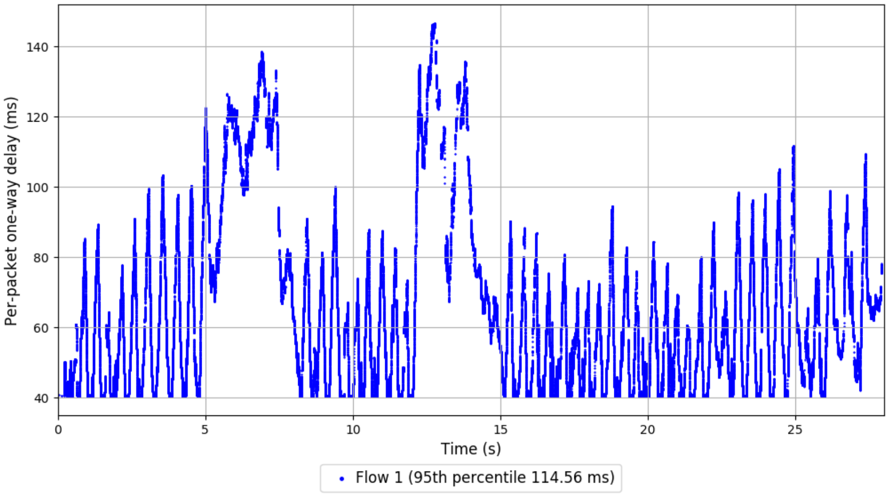


Figure is missing

```
Run 8: Statistics of TaoVA-100x

Start at: 2017-12-05 11:57:46
End at: 2017-12-05 11:58:16
Local clock offset: -0.35 ms
Remote clock offset: -8.3 ms

# Below is generated by plot.py at 2017-12-05 15:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.76 Mbit/s
95th percentile per-packet one-way delay: 114.560 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 51.76 Mbit/s
95th percentile per-packet one-way delay: 114.560 ms
Loss rate: 0.53%
```

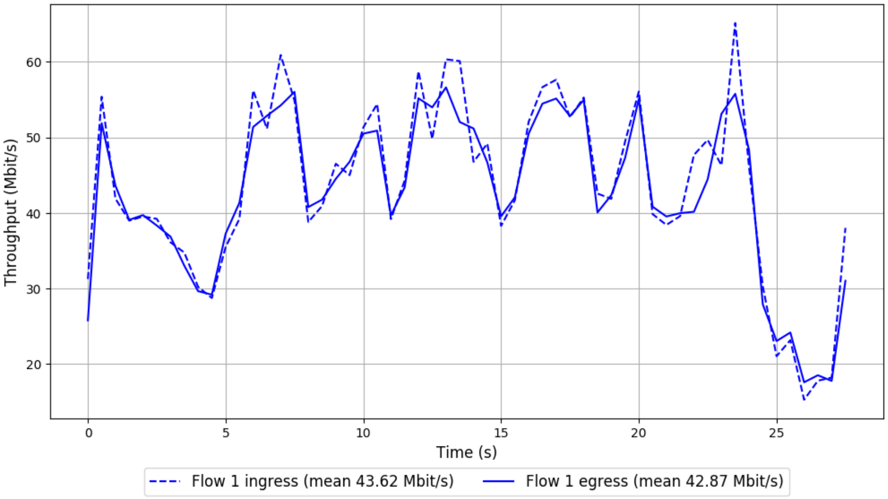
Run 8: Report of TaoVA-100x — Data Link

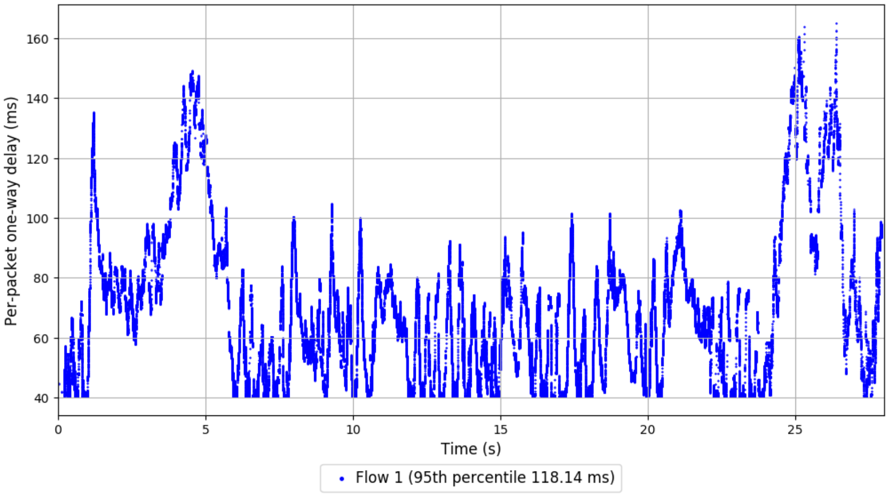




```
Run 9: Statistics of TaoVA-100x

Start at: 2017-12-05 12:14:47
End at: 2017-12-05 12:15:17
Local clock offset: 0.235 ms
Remote clock offset: -8.092 ms

# Below is generated by plot.py at 2017-12-05 15:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.87 Mbit/s
95th percentile per-packet one-way delay: 118.136 ms
Loss rate: 2.02%
-- Flow 1:
Average throughput: 42.87 Mbit/s
95th percentile per-packet one-way delay: 118.136 ms
Loss rate: 2.02%
```

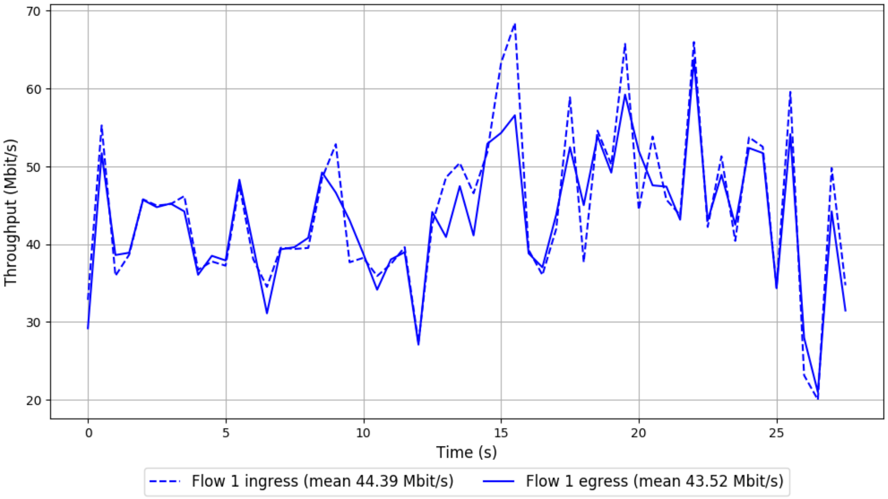
Run 9: Report of TaoVA-100x — Data Link

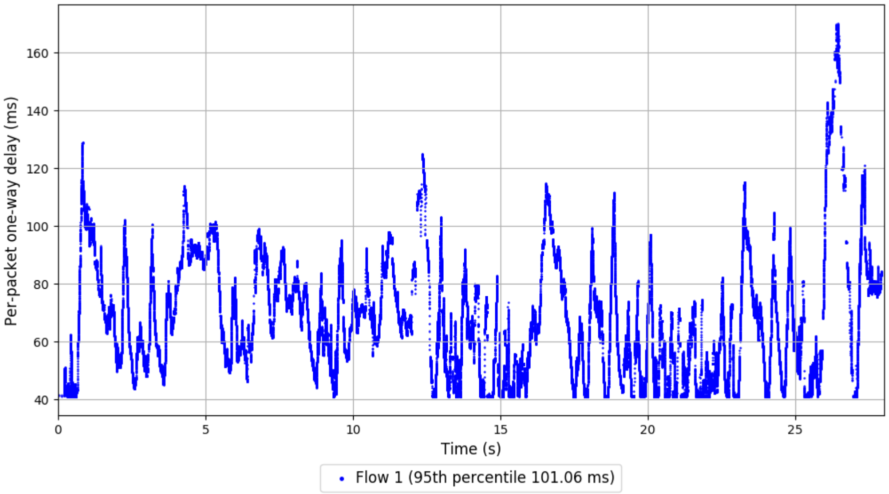




```
Run 10: Statistics of TaoVA-100x

Start at: 2017-12-05 12:31:24
End at: 2017-12-05 12:31:54
Local clock offset: 0.671 ms
Remote clock offset: -7.486 ms

# Below is generated by plot.py at 2017-12-05 15:49:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.52 Mbit/s
95th percentile per-packet one-way delay: 101.065 ms
Loss rate: 2.27%
-- Flow 1:
Average throughput: 43.52 Mbit/s
95th percentile per-packet one-way delay: 101.065 ms
Loss rate: 2.27%
```

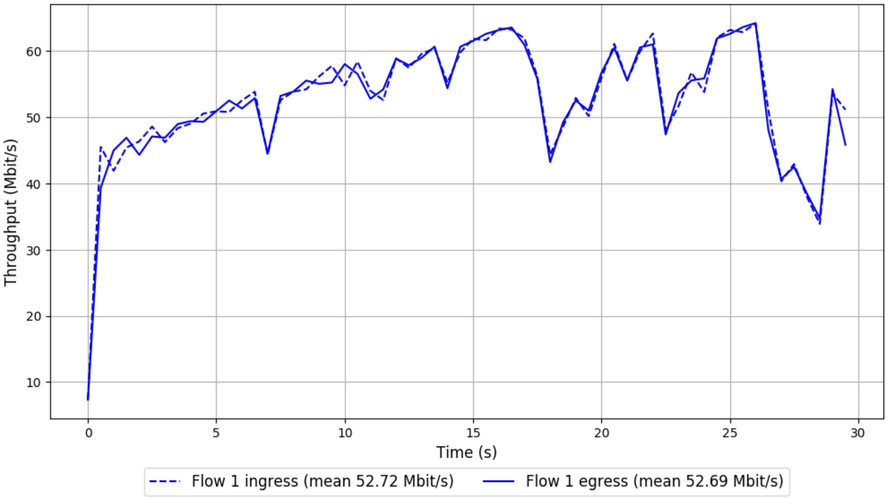
Run 10: Report of TaoVA-100x — Data Link

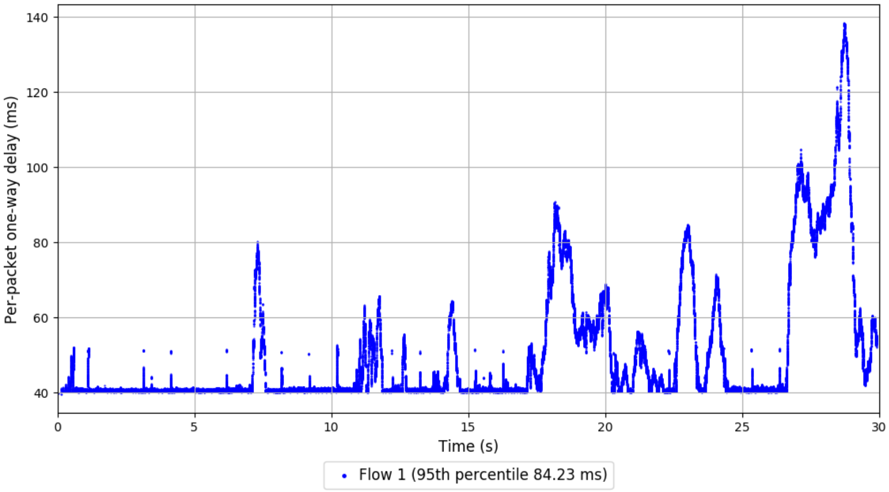




```
Run 1: Statistics of TCP Vegas

Start at: 2017-12-05 10:04:53
End at: 2017-12-05 10:05:23
Local clock offset: 0.854 ms
Remote clock offset: -5.857 ms

# Below is generated by plot.py at 2017-12-05 15:49:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.69 Mbit/s
95th percentile per-packet one-way delay: 84.227 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 52.69 Mbit/s
95th percentile per-packet one-way delay: 84.227 ms
Loss rate: 0.34%
```

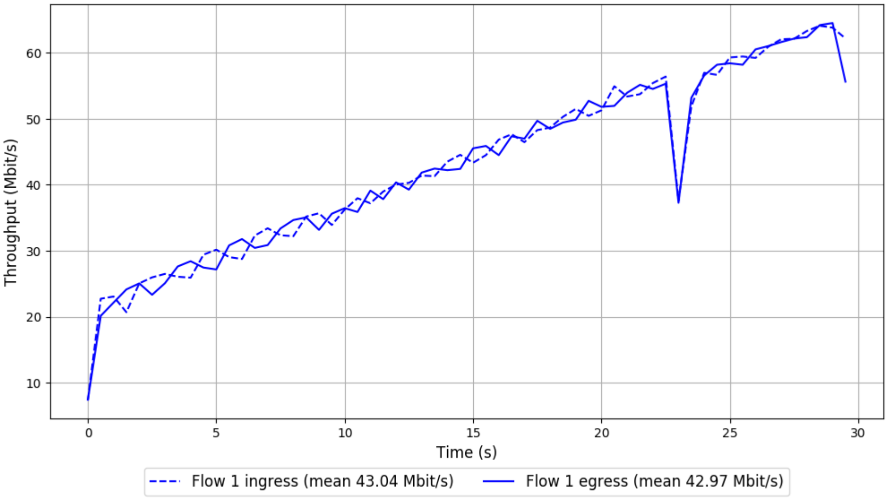
Run 1: Report of TCP Vegas — Data Link

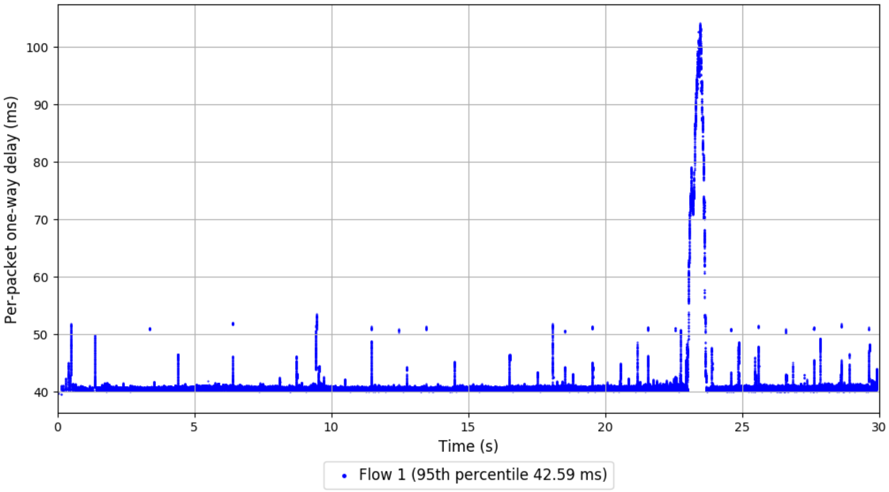




```
Run 2: Statistics of TCP Vegas

Start at: 2017-12-05 10:21:41
End at: 2017-12-05 10:22:12
Local clock offset: 0.834 ms
Remote clock offset: -5.743 ms

# Below is generated by plot.py at 2017-12-05 15:49:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.97 Mbit/s
95th percentile per-packet one-way delay: 42.594 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 42.97 Mbit/s
95th percentile per-packet one-way delay: 42.594 ms
Loss rate: 0.44%
```

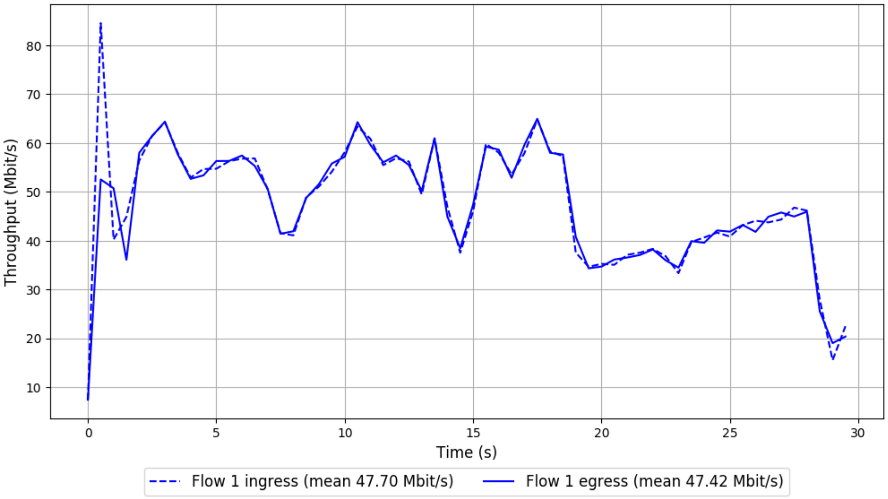
Run 2: Report of TCP Vegas — Data Link

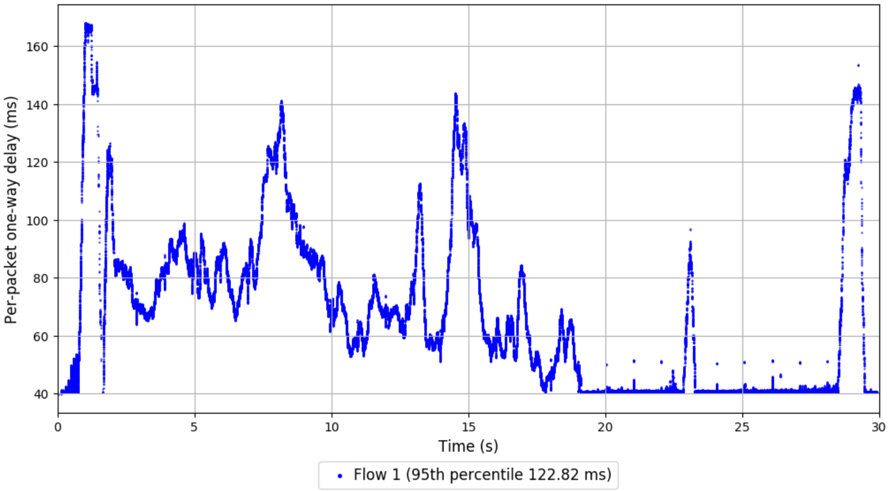




```
Run 3: Statistics of TCP Vegas

Start at: 2017-12-05 10:38:14
End at: 2017-12-05 10:38:44
Local clock offset: 0.319 ms
Remote clock offset: -6.418 ms

# Below is generated by plot.py at 2017-12-05 15:50:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.42 Mbit/s
95th percentile per-packet one-way delay: 122.819 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 47.42 Mbit/s
95th percentile per-packet one-way delay: 122.819 ms
Loss rate: 0.88%
```

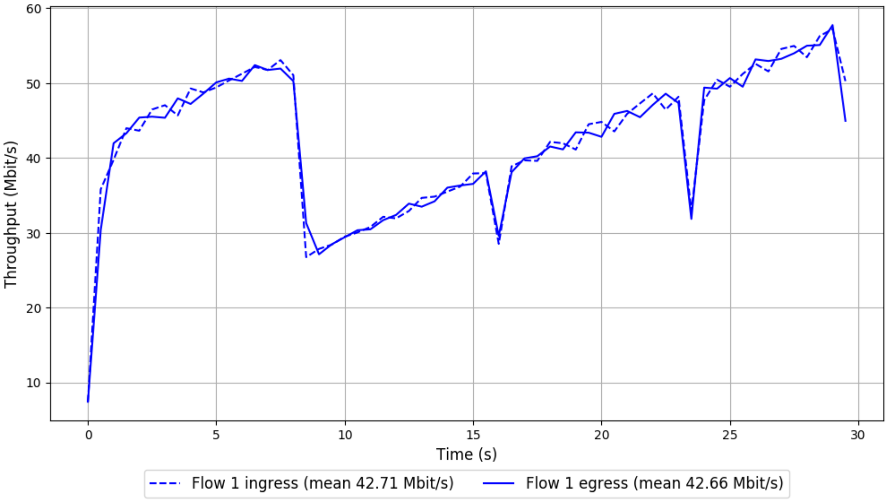
Run 3: Report of TCP Vegas — Data Link

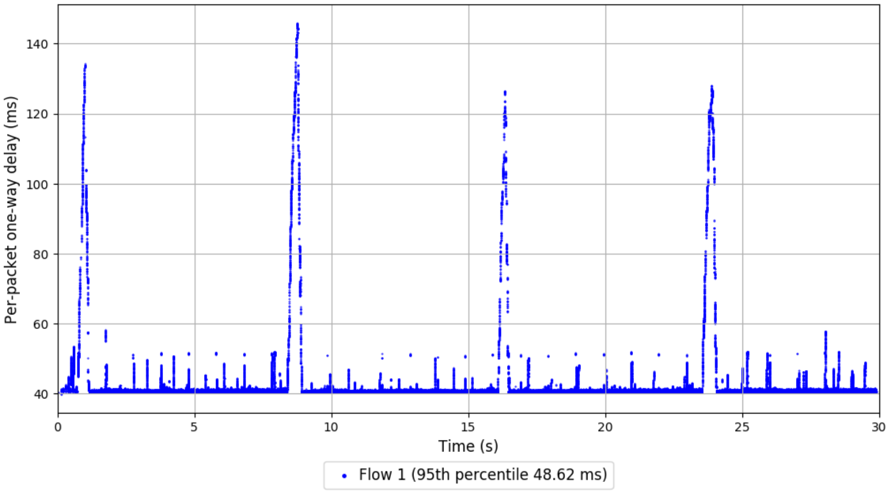




```
Run 4: Statistics of TCP Vegas

Start at: 2017-12-05 10:54:42
End at: 2017-12-05 10:55:12
Local clock offset: -0.049 ms
Remote clock offset: -7.092 ms

# Below is generated by plot.py at 2017-12-05 15:50:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.66 Mbit/s
95th percentile per-packet one-way delay: 48.621 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 42.66 Mbit/s
95th percentile per-packet one-way delay: 48.621 ms
Loss rate: 0.40%
```

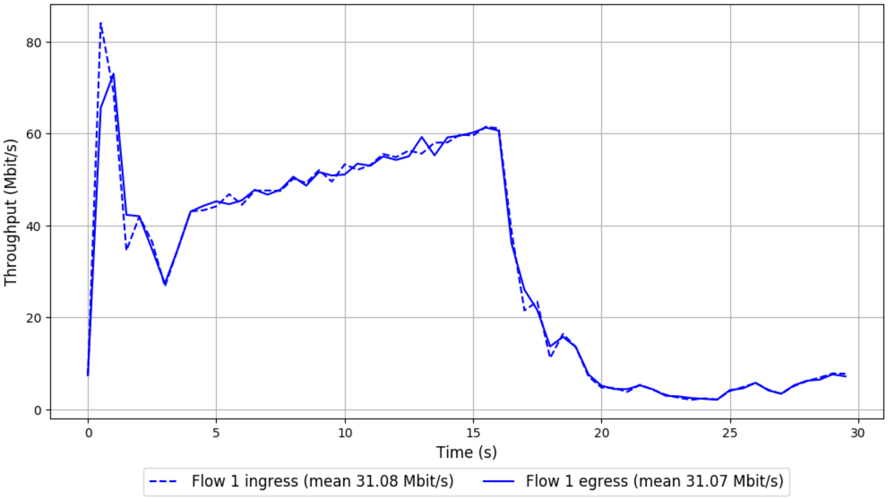
Run 4: Report of TCP Vegas — Data Link

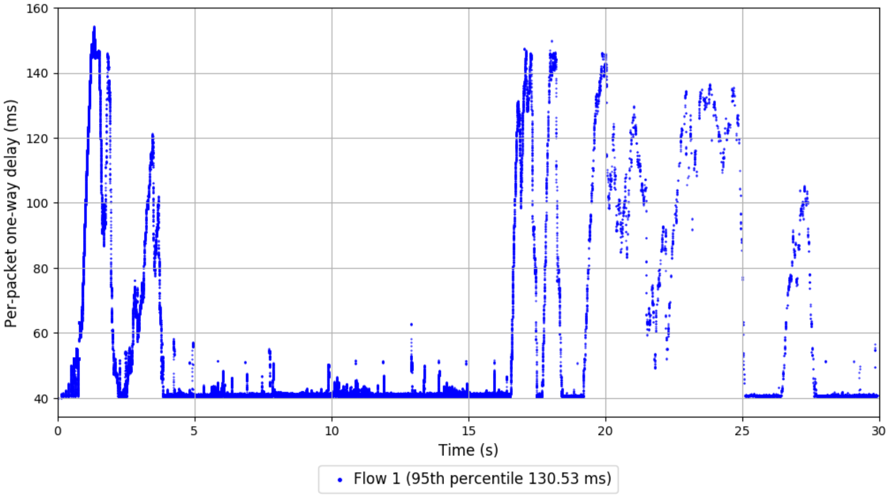




```
Run 5: Statistics of TCP Vegas

Start at: 2017-12-05 11:11:09
End at: 2017-12-05 11:11:39
Local clock offset: -0.242 ms
Remote clock offset: -7.383 ms

# Below is generated by plot.py at 2017-12-05 15:50:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 31.07 Mbit/s
95th percentile per-packet one-way delay: 130.525 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 31.07 Mbit/s
95th percentile per-packet one-way delay: 130.525 ms
Loss rate: 0.32%
```

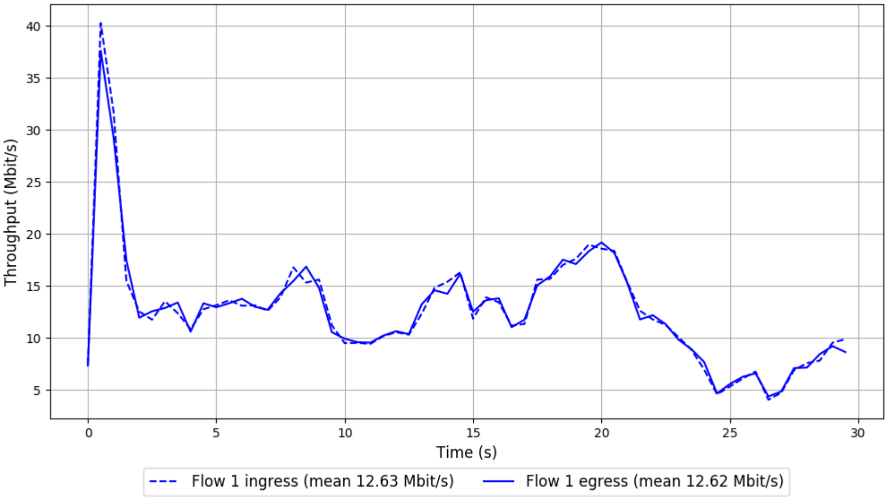
Run 5: Report of TCP Vegas — Data Link

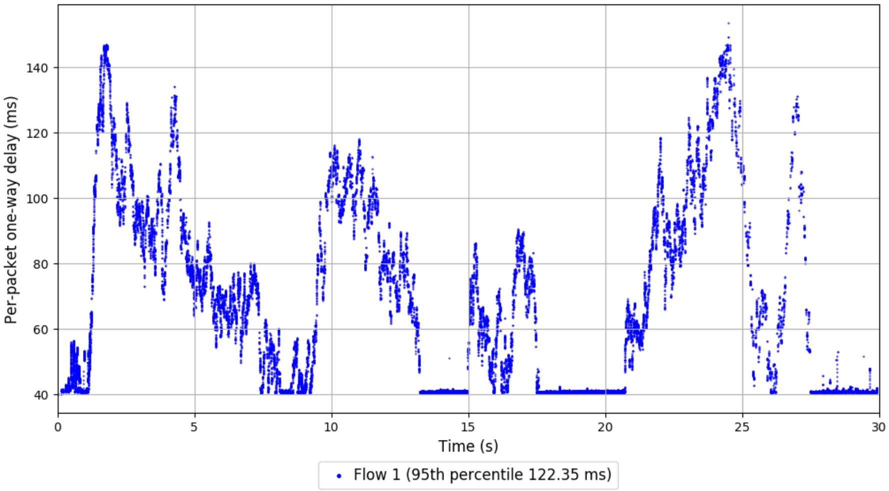




```
Run 6: Statistics of TCP Vegas

Start at: 2017-12-05 11:27:37
End at: 2017-12-05 11:28:07
Local clock offset: -0.115 ms
Remote clock offset: -7.359 ms

# Below is generated by plot.py at 2017-12-05 15:50:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.62 Mbit/s
95th percentile per-packet one-way delay: 122.353 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 12.62 Mbit/s
95th percentile per-packet one-way delay: 122.353 ms
Loss rate: 0.36%
```

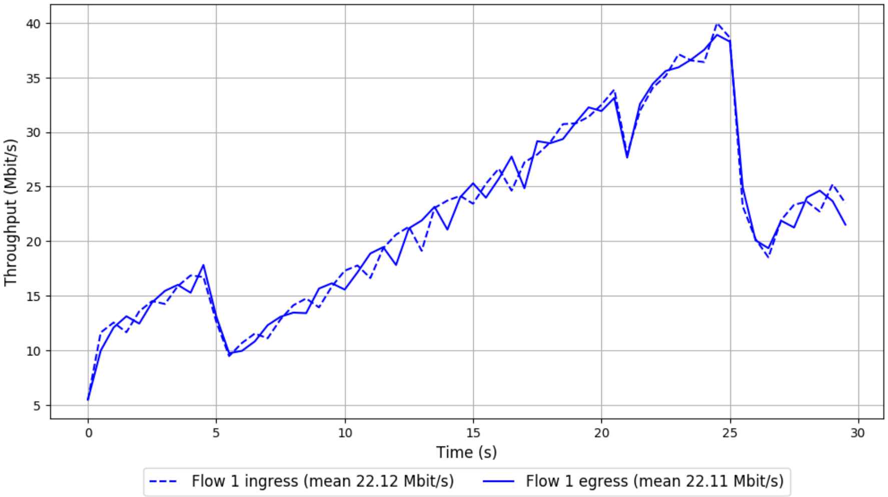
Run 6: Report of TCP Vegas — Data Link

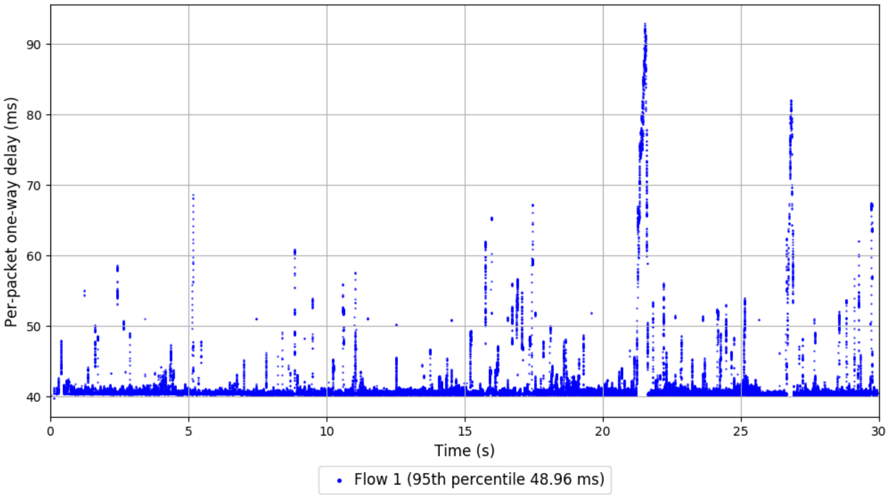




```
Run 7: Statistics of TCP Vegas

Start at: 2017-12-05 11:44:37
End at: 2017-12-05 11:45:07
Local clock offset: -0.26 ms
Remote clock offset: -8.251 ms

# Below is generated by plot.py at 2017-12-05 15:50:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.11 Mbit/s
95th percentile per-packet one-way delay: 48.957 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 22.11 Mbit/s
95th percentile per-packet one-way delay: 48.957 ms
Loss rate: 0.34%
```

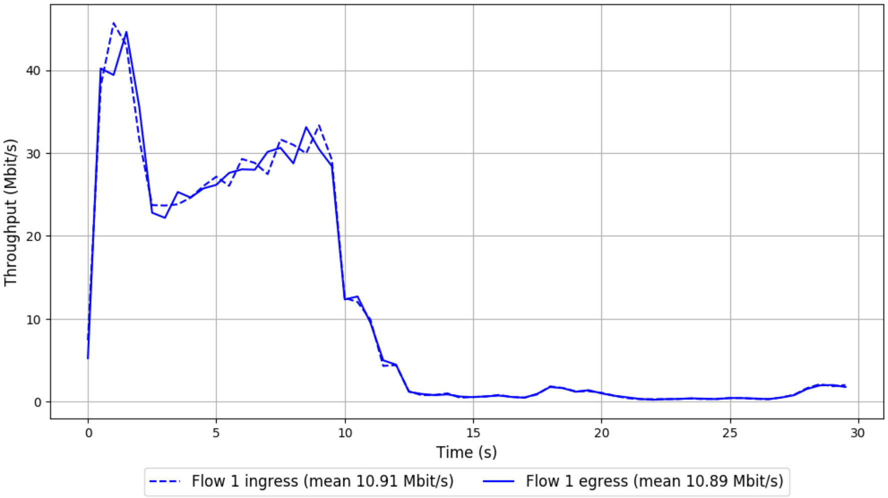
Run 7: Report of TCP Vegas — Data Link

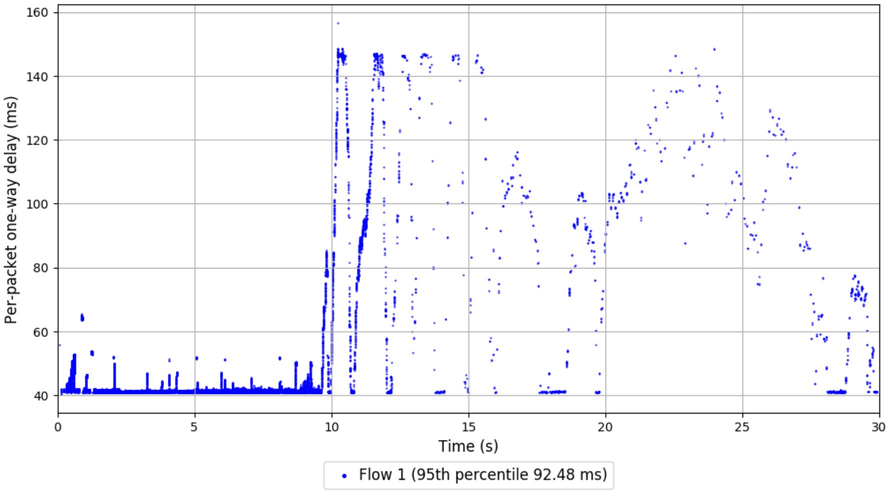




```
Run 8: Statistics of TCP Vegas

Start at: 2017-12-05 12:02:32
End at: 2017-12-05 12:03:02
Local clock offset: -0.077 ms
Remote clock offset: -8.232 ms

# Below is generated by plot.py at 2017-12-05 15:50:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 10.89 Mbit/s
95th percentile per-packet one-way delay: 92.477 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 10.89 Mbit/s
95th percentile per-packet one-way delay: 92.477 ms
Loss rate: 0.60%
```

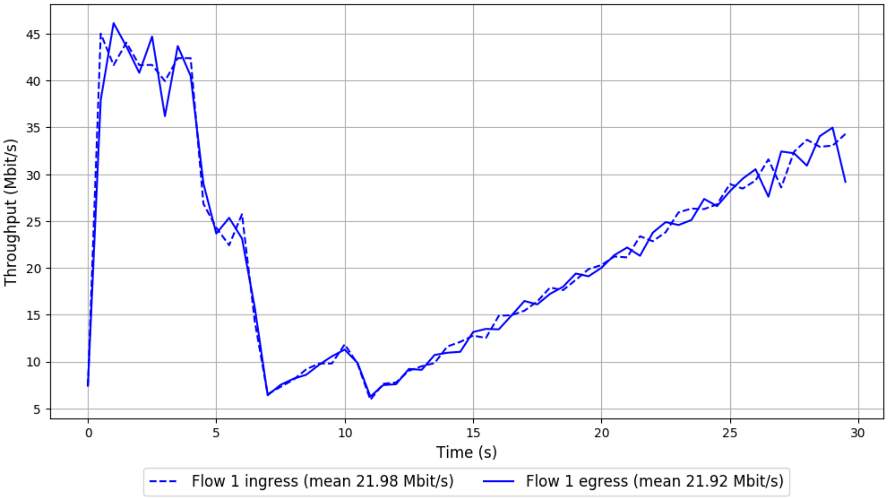
Run 8: Report of TCP Vegas — Data Link

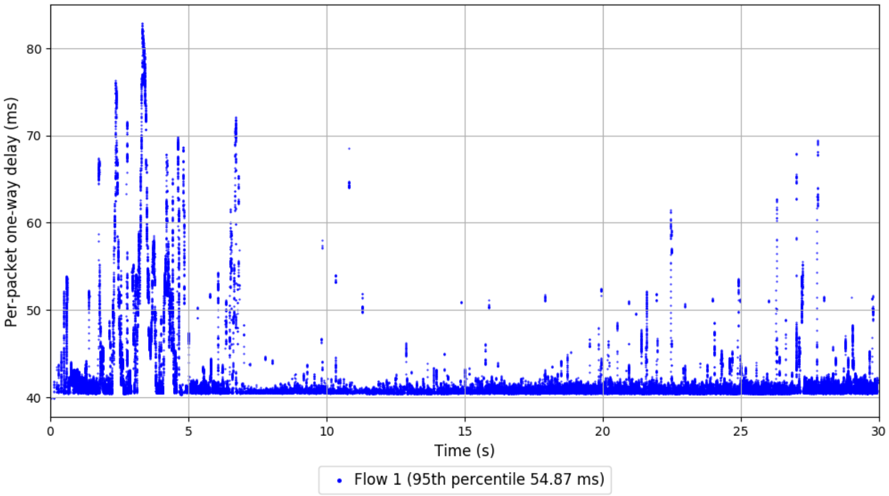




```
Run 9: Statistics of TCP Vegas

Start at: 2017-12-05 12:19:32
End at: 2017-12-05 12:20:02
Local clock offset: 0.209 ms
Remote clock offset: -7.806 ms

# Below is generated by plot.py at 2017-12-05 15:50:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.92 Mbit/s
95th percentile per-packet one-way delay: 54.874 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 21.92 Mbit/s
95th percentile per-packet one-way delay: 54.874 ms
Loss rate: 0.56%
```

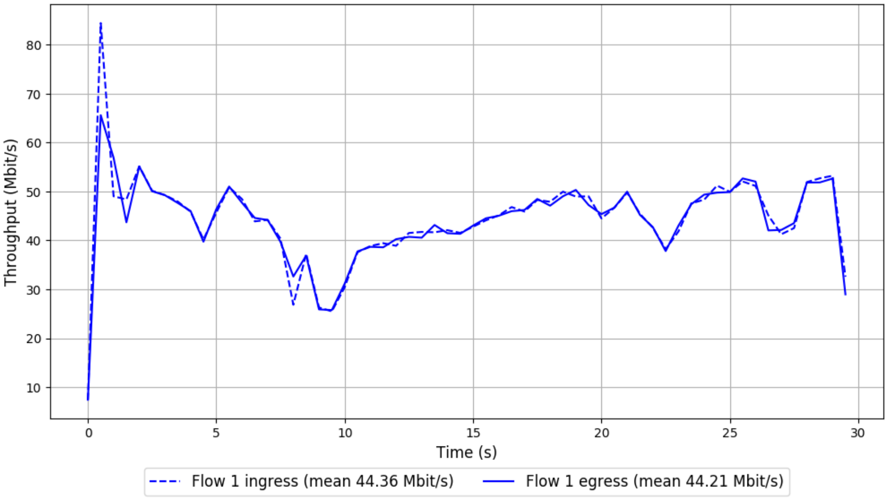
Run 9: Report of TCP Vegas — Data Link

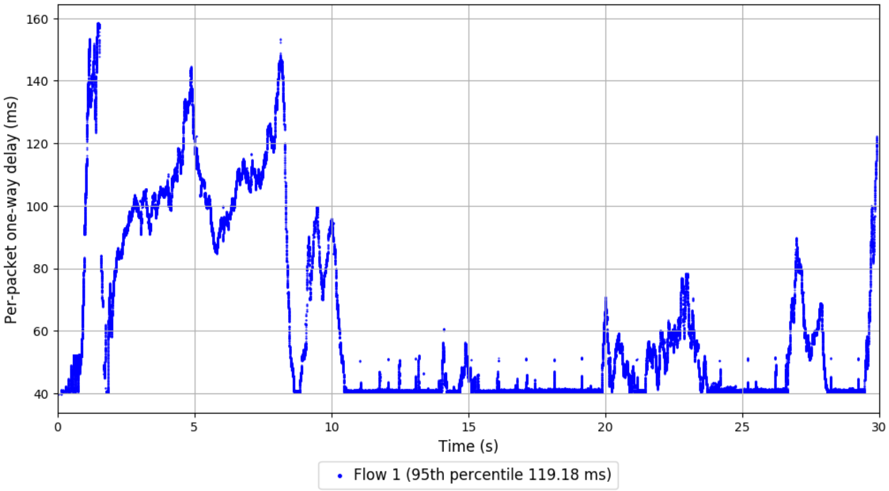




```
Run 10: Statistics of TCP Vegas

Start at: 2017-12-05 12:36:17
End at: 2017-12-05 12:36:47
Local clock offset: 0.793 ms
Remote clock offset: -6.889 ms

# Below is generated by plot.py at 2017-12-05 15:50:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.21 Mbit/s
95th percentile per-packet one-way delay: 119.180 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 44.21 Mbit/s
95th percentile per-packet one-way delay: 119.180 ms
Loss rate: 0.62%
```

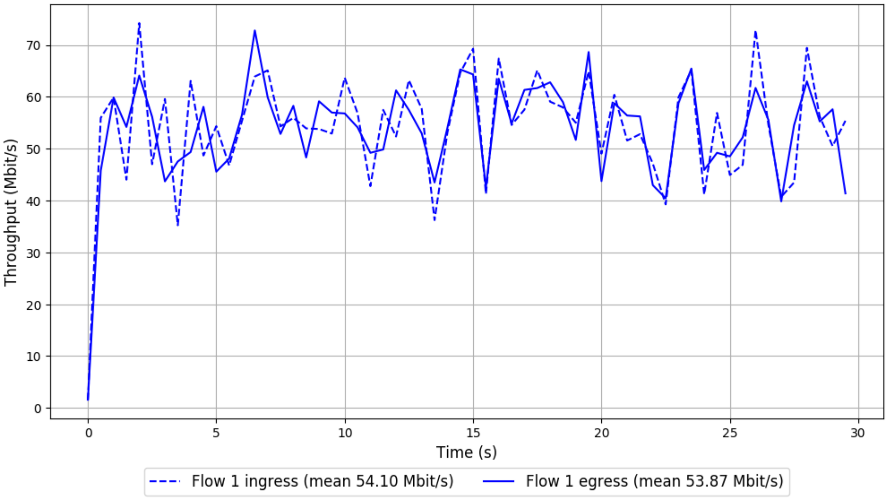
Run 10: Report of TCP Vegas — Data Link

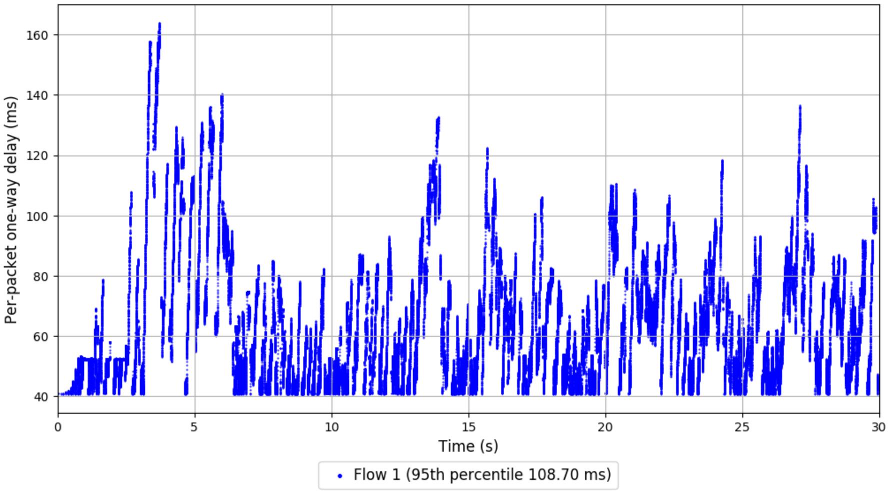




```
Run 1: Statistics of Verus

Start at: 2017-12-05 09:51:24
End at: 2017-12-05 09:51:54
Local clock offset: 0.51 ms
Remote clock offset: -5.873 ms

# Below is generated by plot.py at 2017-12-05 15:50:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 53.87 Mbit/s
95th percentile per-packet one-way delay: 108.700 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 53.87 Mbit/s
95th percentile per-packet one-way delay: 108.700 ms
Loss rate: 0.71%
```

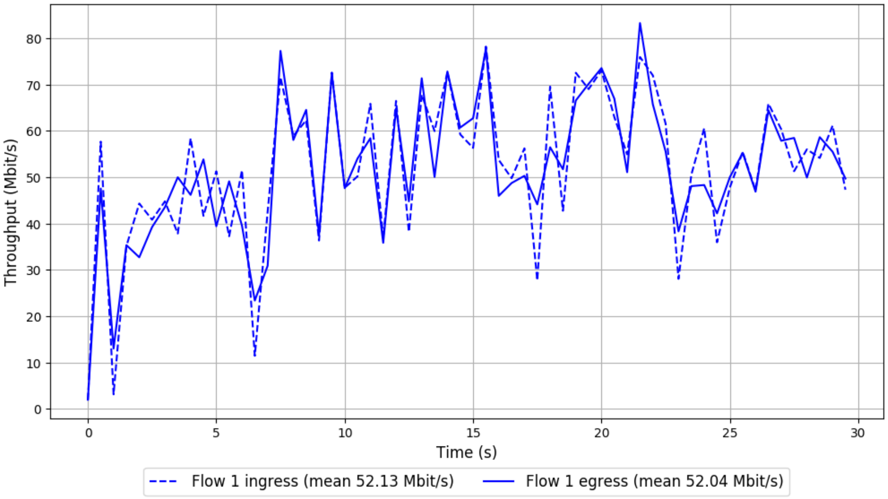
Run 1: Report of Verus — Data Link

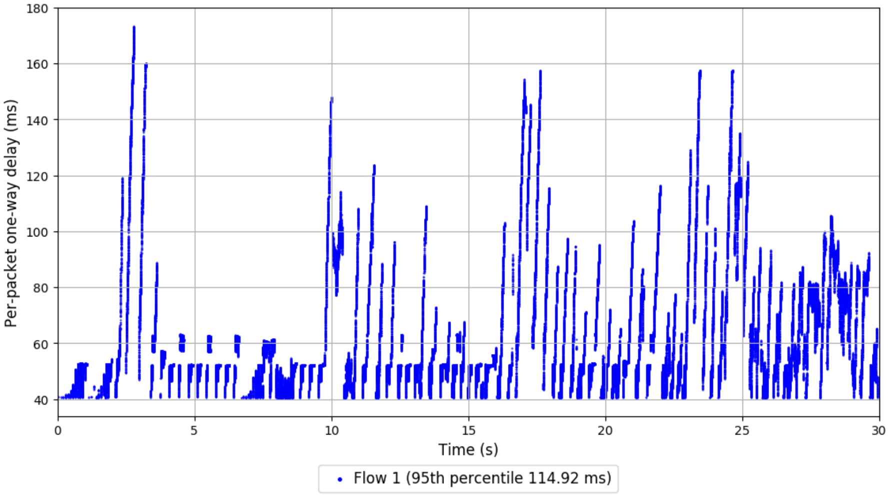




```
Run 2: Statistics of Verus

Start at: 2017-12-05 10:09:39
End at: 2017-12-05 10:10:09
Local clock offset: 0.921 ms
Remote clock offset: -5.851 ms

# Below is generated by plot.py at 2017-12-05 15:50:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.04 Mbit/s
95th percentile per-packet one-way delay: 114.916 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 52.04 Mbit/s
95th percentile per-packet one-way delay: 114.916 ms
Loss rate: 0.46%
```

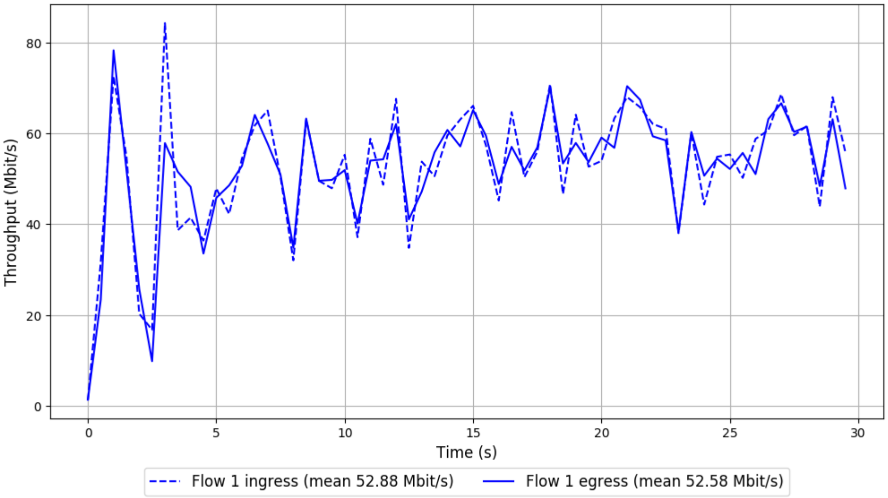
Run 2: Report of Verus — Data Link

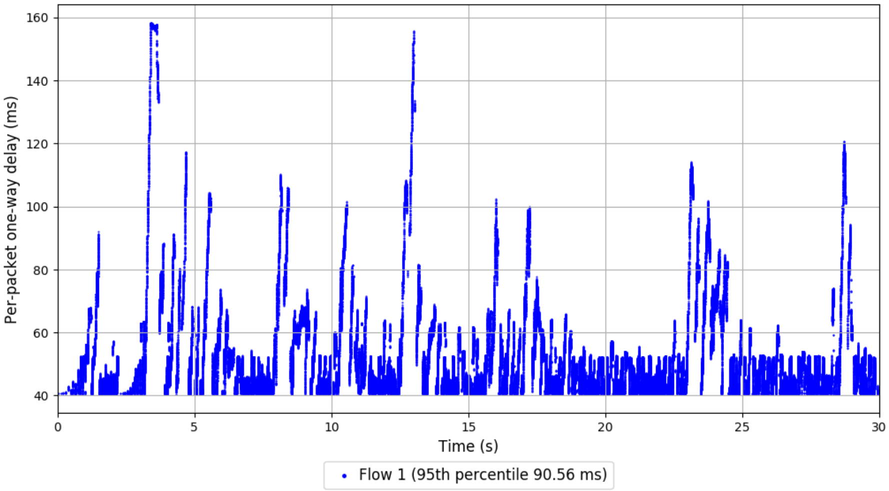




```
Run 3: Statistics of Verus

Start at: 2017-12-05 10:26:28
End at: 2017-12-05 10:26:58
Local clock offset: 0.637 ms
Remote clock offset: -5.916 ms

# Below is generated by plot.py at 2017-12-05 15:50:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.58 Mbit/s
95th percentile per-packet one-way delay: 90.564 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 52.58 Mbit/s
95th percentile per-packet one-way delay: 90.564 ms
Loss rate: 0.85%
```

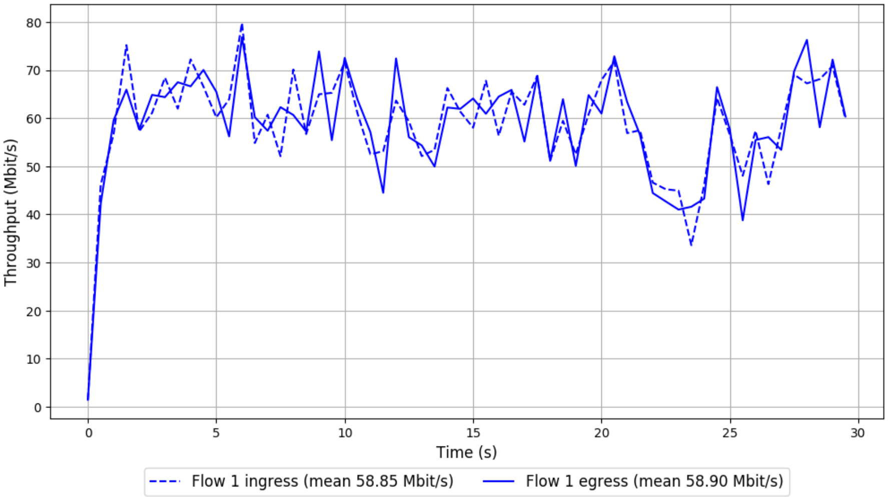
Run 3: Report of Verus — Data Link

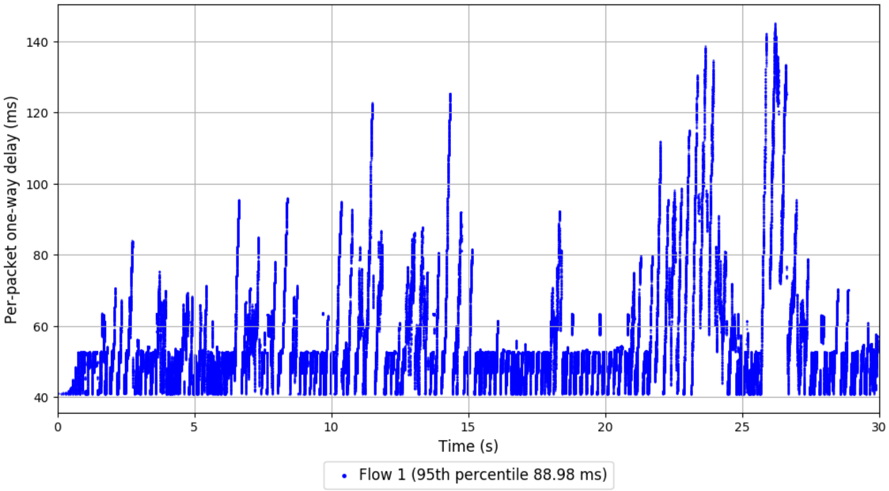




```
Run 4: Statistics of Verus

Start at: 2017-12-05 10:42:56
End at: 2017-12-05 10:43:26
Local clock offset: 0.247 ms
Remote clock offset: -6.552 ms

# Below is generated by plot.py at 2017-12-05 15:50:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.90 Mbit/s
95th percentile per-packet one-way delay: 88.980 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 58.90 Mbit/s
95th percentile per-packet one-way delay: 88.980 ms
Loss rate: 0.23%
```

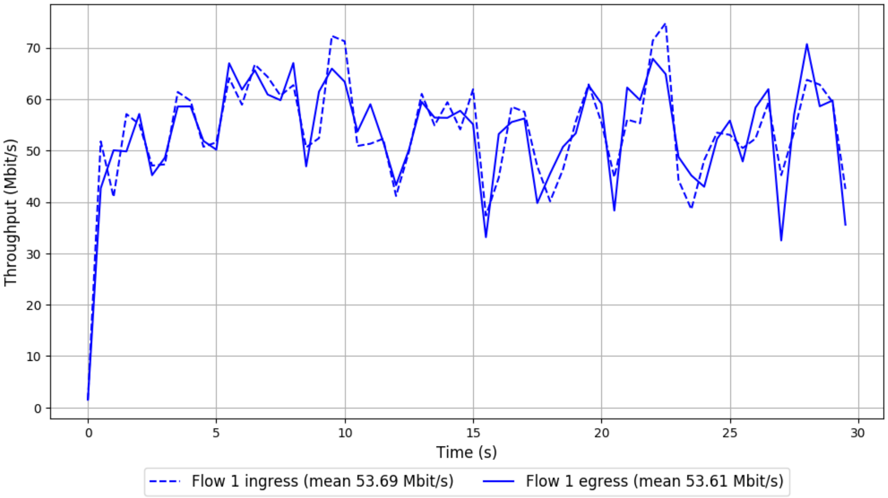
Run 4: Report of Verus — Data Link

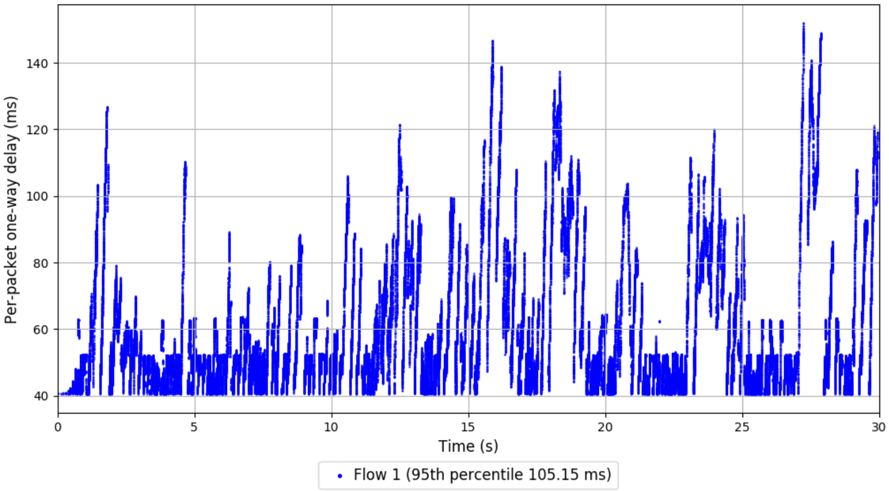




```
Run 5: Statistics of Verus

Start at: 2017-12-05 10:59:25
End at: 2017-12-05 10:59:56
Local clock offset: -0.132 ms
Remote clock offset: -7.41 ms

# Below is generated by plot.py at 2017-12-05 15:50:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 53.61 Mbit/s
95th percentile per-packet one-way delay: 105.149 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 53.61 Mbit/s
95th percentile per-packet one-way delay: 105.149 ms
Loss rate: 0.41%
```

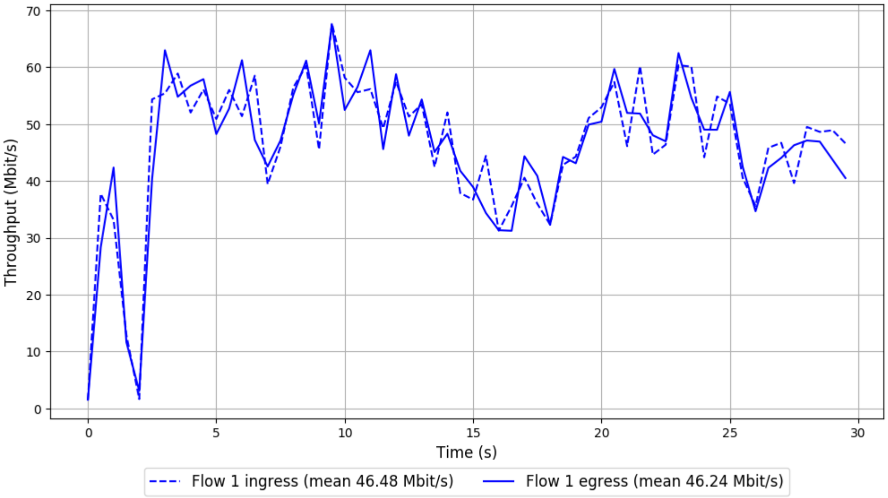
Run 5: Report of Verus — Data Link

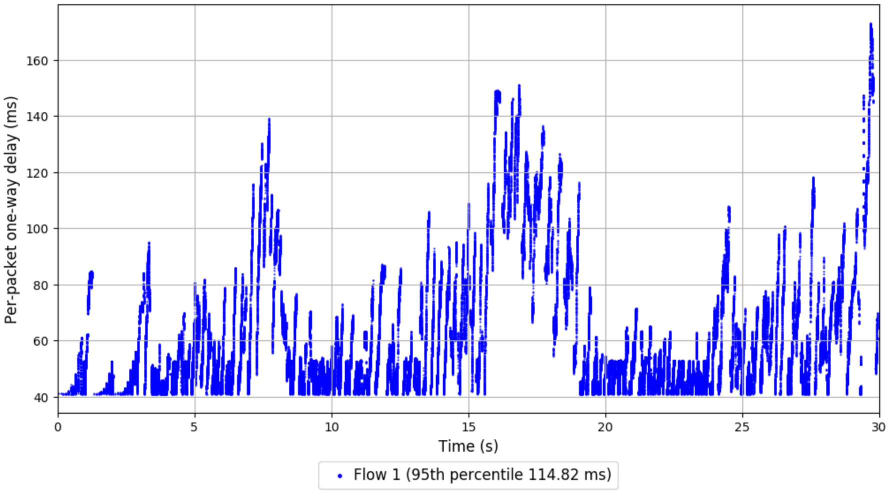




```
Run 6: Statistics of Verus

Start at: 2017-12-05 11:15:53
End at: 2017-12-05 11:16:23
Local clock offset: -0.151 ms
Remote clock offset: -7.451 ms

# Below is generated by plot.py at 2017-12-05 15:50:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.24 Mbit/s
95th percentile per-packet one-way delay: 114.818 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 46.24 Mbit/s
95th percentile per-packet one-way delay: 114.818 ms
Loss rate: 0.81%
```

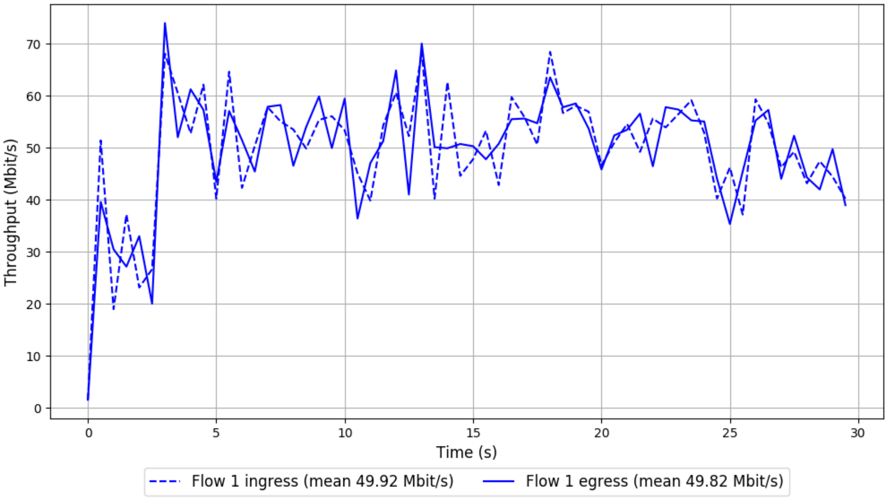
Run 6: Report of Verus — Data Link

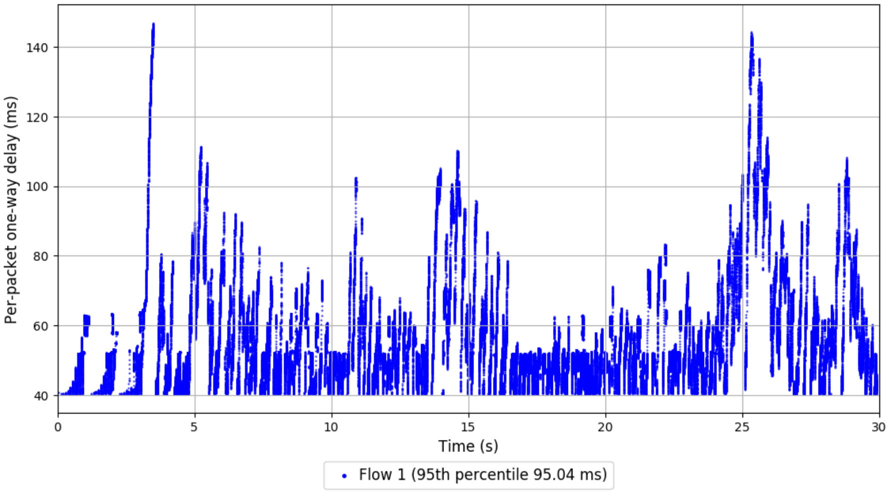




```
Run 7: Statistics of Verus

Start at: 2017-12-05 11:32:17
End at: 2017-12-05 11:32:47
Local clock offset: -0.219 ms
Remote clock offset: -7.481 ms

# Below is generated by plot.py at 2017-12-05 15:50:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.82 Mbit/s
95th percentile per-packet one-way delay: 95.042 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 49.82 Mbit/s
95th percentile per-packet one-way delay: 95.042 ms
Loss rate: 0.30%
```

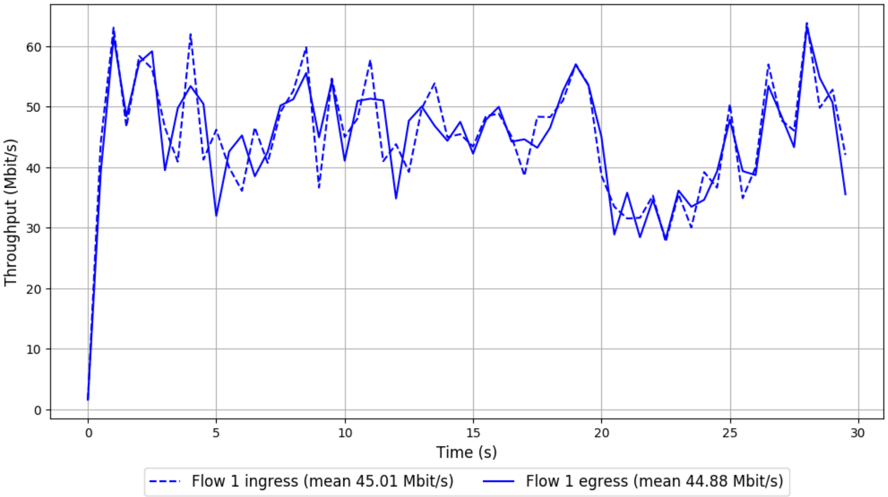
Run 7: Report of Verus — Data Link

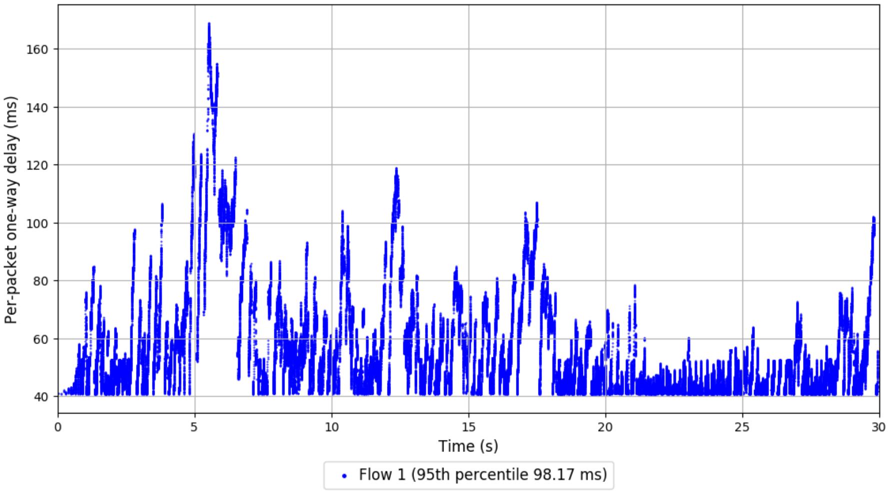




```
Run 8: Statistics of Verus

Start at: 2017-12-05 11:49:27
End at: 2017-12-05 11:49:57
Local clock offset: -0.422 ms
Remote clock offset: -8.537 ms

# Below is generated by plot.py at 2017-12-05 15:51:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.88 Mbit/s
95th percentile per-packet one-way delay: 98.172 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 44.88 Mbit/s
95th percentile per-packet one-way delay: 98.172 ms
Loss rate: 0.53%
```

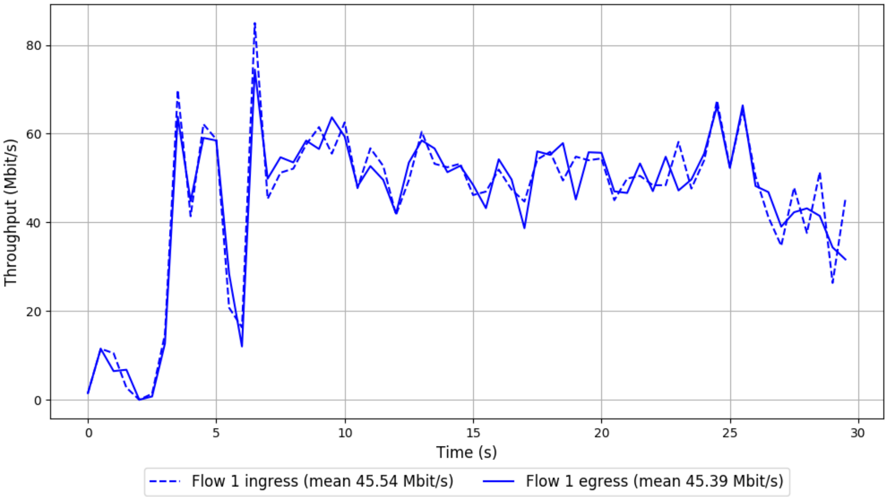
Run 8: Report of Verus — Data Link

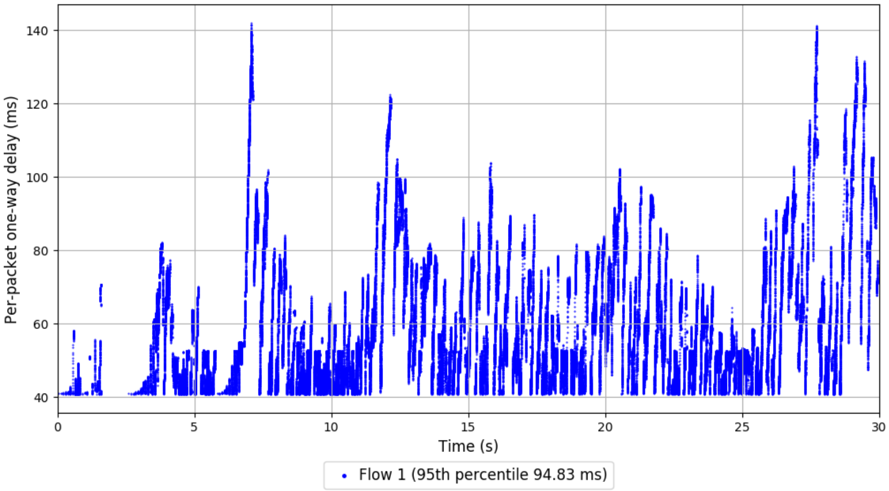




```
Run 9: Statistics of Verus

Start at: 2017-12-05 12:07:16
End at: 2017-12-05 12:07:46
Local clock offset: 0.031 ms
Remote clock offset: -8.227 ms

# Below is generated by plot.py at 2017-12-05 15:51:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.39 Mbit/s
95th percentile per-packet one-way delay: 94.830 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 45.39 Mbit/s
95th percentile per-packet one-way delay: 94.830 ms
Loss rate: 0.62%
```

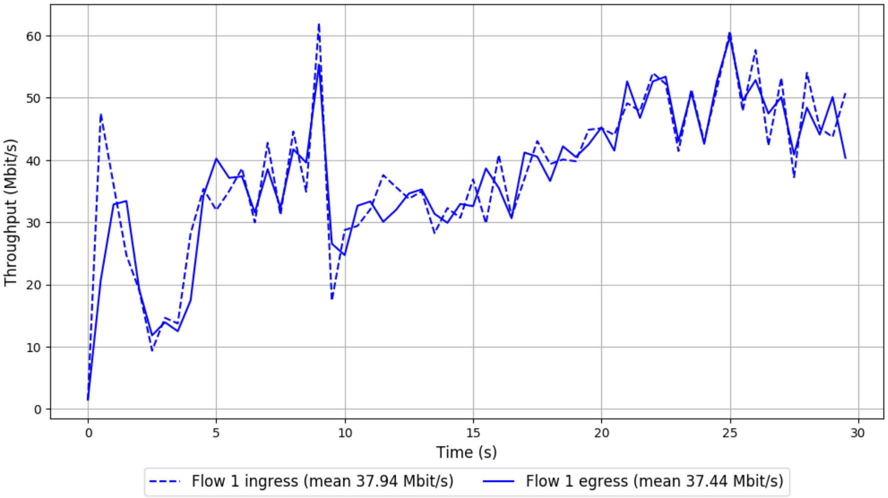
Run 9: Report of Verus — Data Link

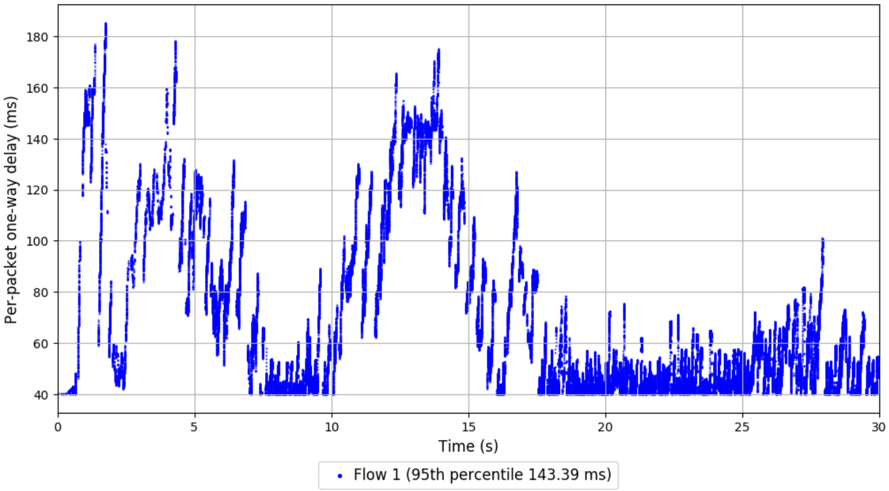




```
Run 10: Statistics of Verus

Start at: 2017-12-05 12:24:18
End at: 2017-12-05 12:24:48
Local clock offset: 0.3 ms
Remote clock offset: -7.602 ms

# Below is generated by plot.py at 2017-12-05 15:51:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.44 Mbit/s
95th percentile per-packet one-way delay: 143.386 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 37.44 Mbit/s
95th percentile per-packet one-way delay: 143.386 ms
Loss rate: 1.58%
```

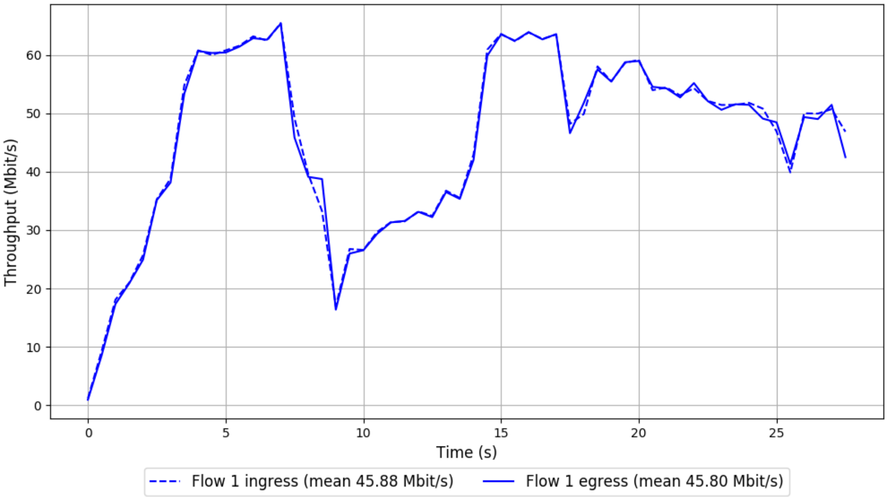
Run 10: Report of Verus — Data Link

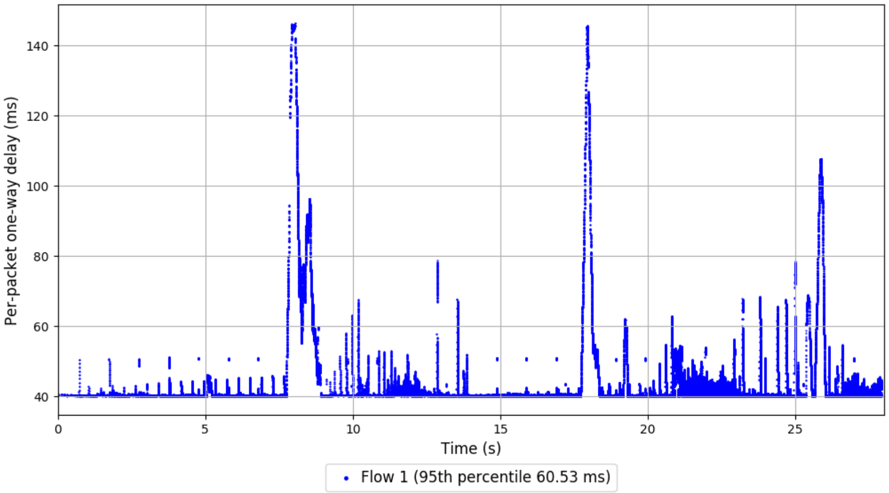




```
Run 1: Statistics of Copa

Start at: 2017-12-05 09:49:00
End at: 2017-12-05 09:49:30
Local clock offset: 0.338 ms
Remote clock offset: -5.904 ms

# Below is generated by plot.py at 2017-12-05 15:51:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.80 Mbit/s
95th percentile per-packet one-way delay: 60.526 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 45.80 Mbit/s
95th percentile per-packet one-way delay: 60.526 ms
Loss rate: 0.48%
```

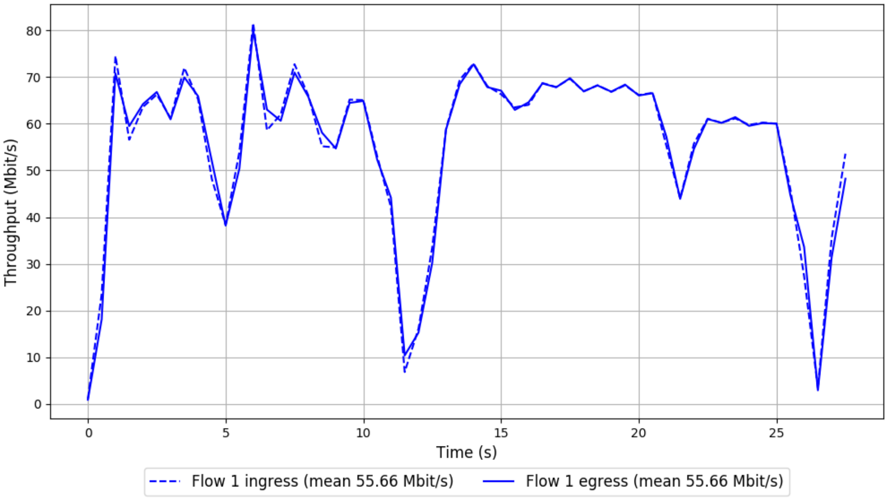
Run 1: Report of Copa — Data Link

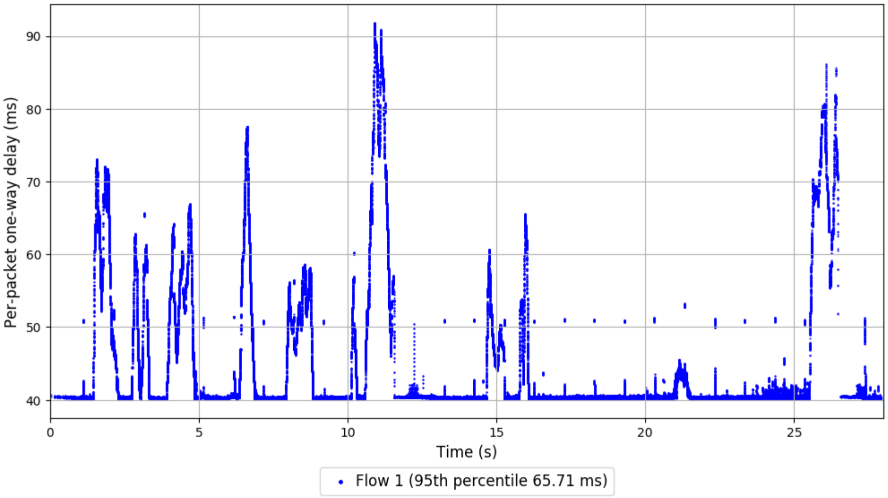




```
Run 2: Statistics of Copa

Start at: 2017-12-05 10:07:15
End at: 2017-12-05 10:07:45
Local clock offset: 0.757 ms
Remote clock offset: -5.846 ms

# Below is generated by plot.py at 2017-12-05 15:52:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.66 Mbit/s
95th percentile per-packet one-way delay: 65.708 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 55.66 Mbit/s
95th percentile per-packet one-way delay: 65.708 ms
Loss rate: 0.32%
```

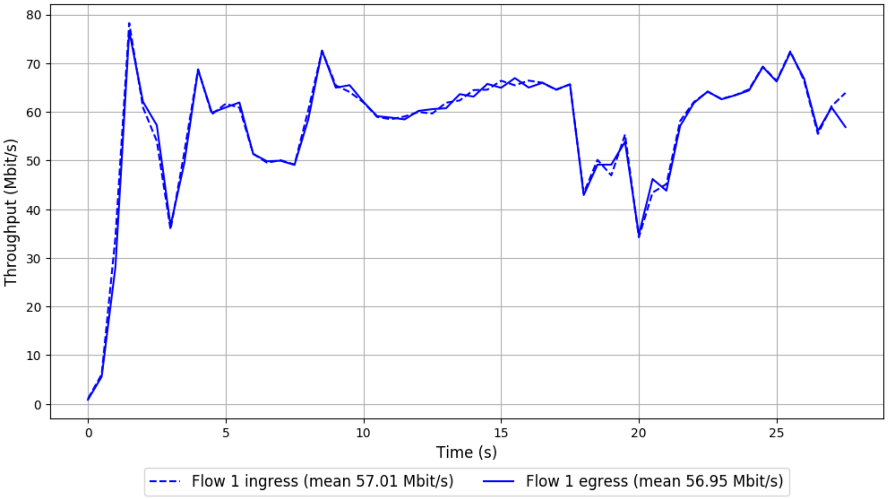
Run 2: Report of Copa — Data Link

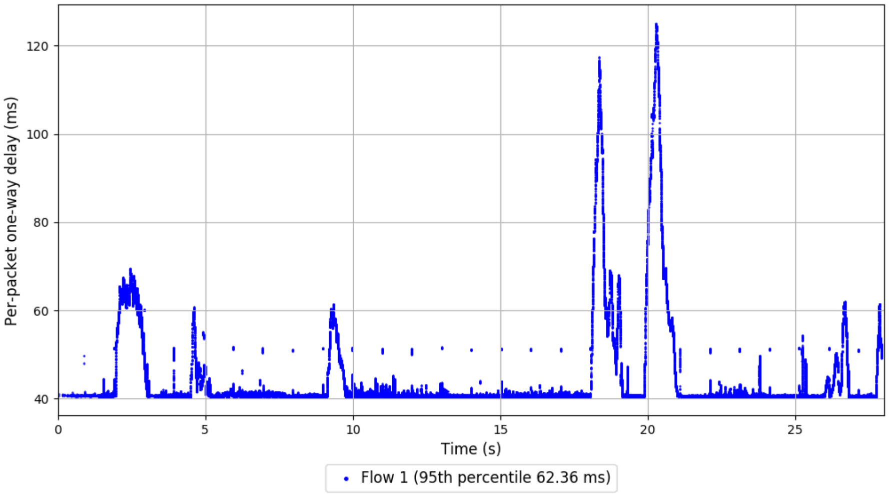




```
Run 3: Statistics of Copa

Start at: 2017-12-05 10:24:03
End at: 2017-12-05 10:24:33
Local clock offset: 0.844 ms
Remote clock offset: -5.861 ms

# Below is generated by plot.py at 2017-12-05 15:52:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.95 Mbit/s
95th percentile per-packet one-way delay: 62.356 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 56.95 Mbit/s
95th percentile per-packet one-way delay: 62.356 ms
Loss rate: 0.41%
```

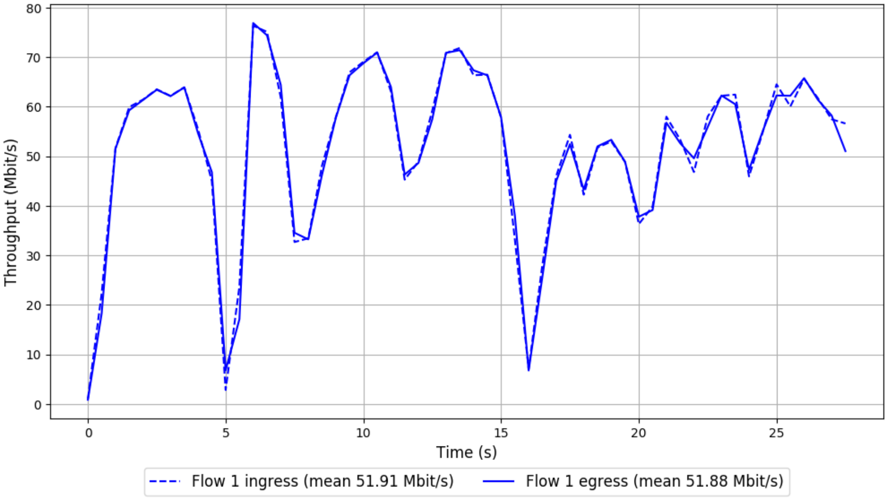
Run 3: Report of Copa — Data Link

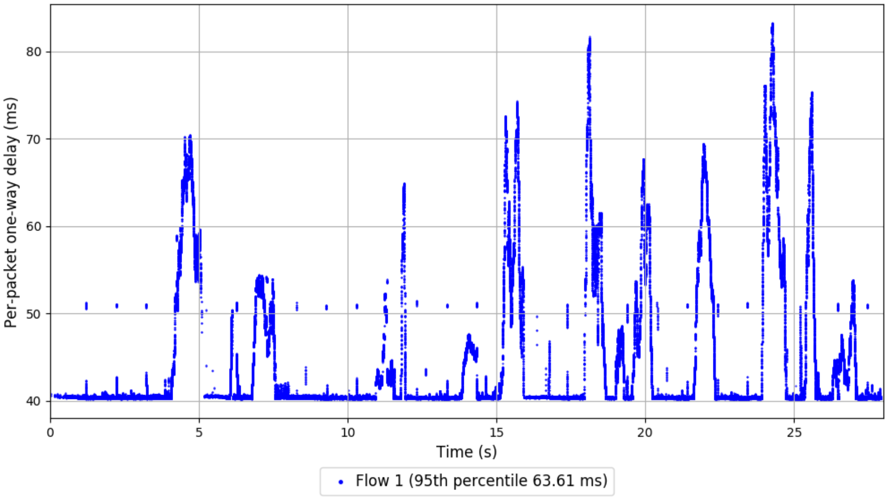




```
Run 4: Statistics of Copa

Start at: 2017-12-05 10:40:35
End at: 2017-12-05 10:41:05
Local clock offset: 0.385 ms
Remote clock offset: -6.39 ms

# Below is generated by plot.py at 2017-12-05 15:52:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.88 Mbit/s
95th percentile per-packet one-way delay: 63.606 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 51.88 Mbit/s
95th percentile per-packet one-way delay: 63.606 ms
Loss rate: 0.36%
```

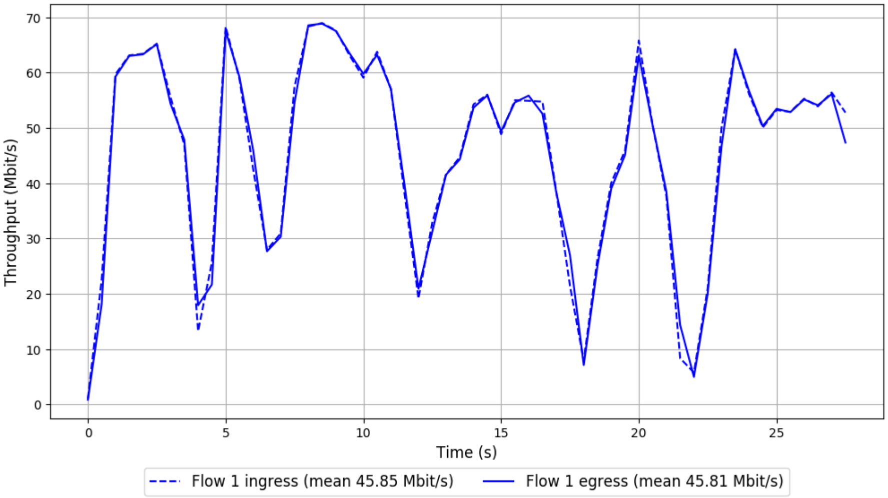
Run 4: Report of Copa — Data Link

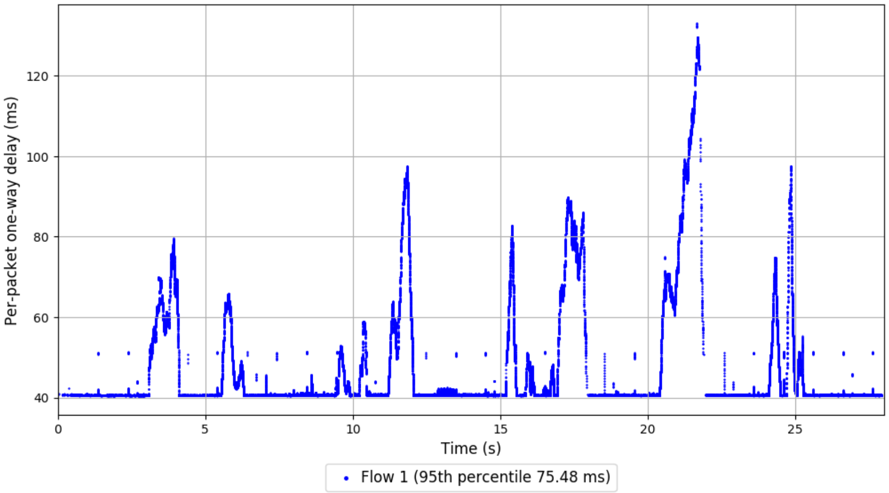




```
Run 5: Statistics of Copa

Start at: 2017-12-05 10:57:02
End at: 2017-12-05 10:57:33
Local clock offset: -0.041 ms
Remote clock offset: -7.439 ms

# Below is generated by plot.py at 2017-12-05 15:52:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.81 Mbit/s
95th percentile per-packet one-way delay: 75.482 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 45.81 Mbit/s
95th percentile per-packet one-way delay: 75.482 ms
Loss rate: 0.39%
```

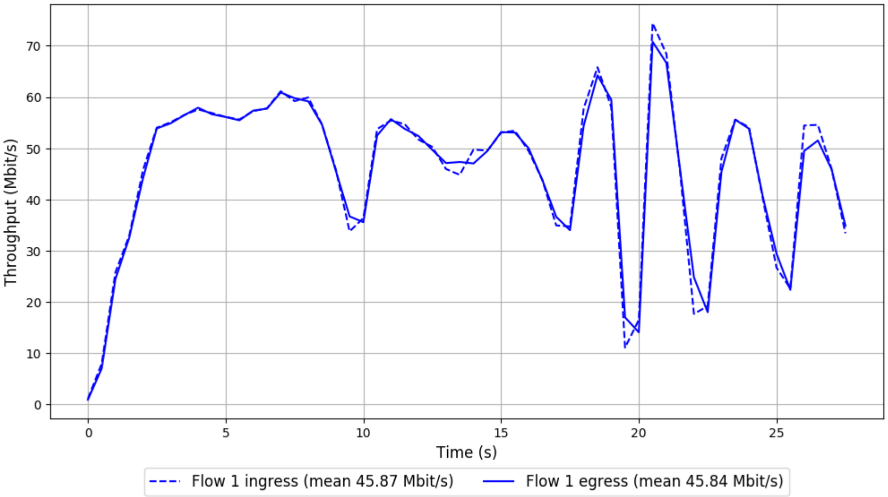
Run 5: Report of Copa — Data Link

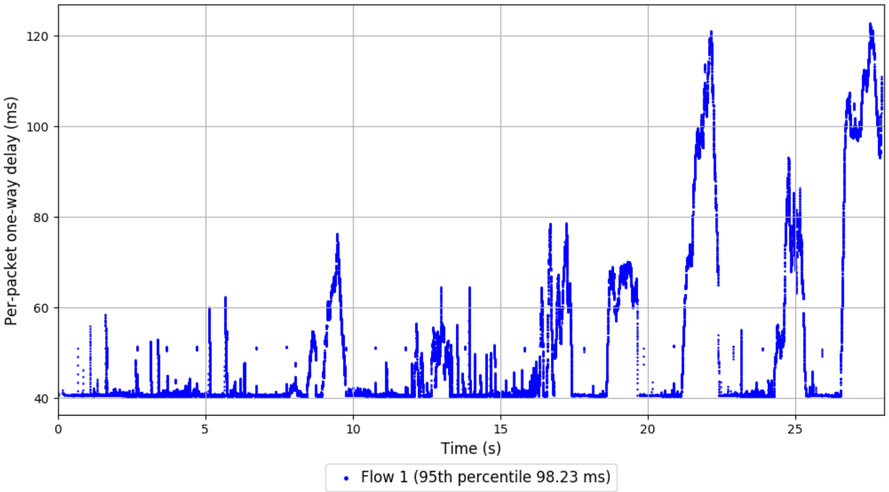




```
Run 6: Statistics of Copa

Start at: 2017-12-05 11:13:31
End at: 2017-12-05 11:14:01
Local clock offset: -0.145 ms
Remote clock offset: -7.377 ms

# Below is generated by plot.py at 2017-12-05 15:52:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.84 Mbit/s
95th percentile per-packet one-way delay: 98.234 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 45.84 Mbit/s
95th percentile per-packet one-way delay: 98.234 ms
Loss rate: 0.34%
```

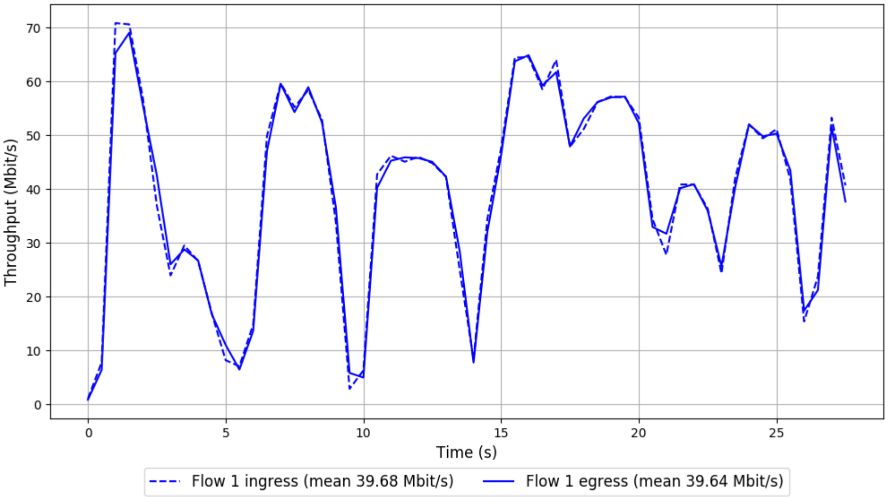
Run 6: Report of Copa — Data Link

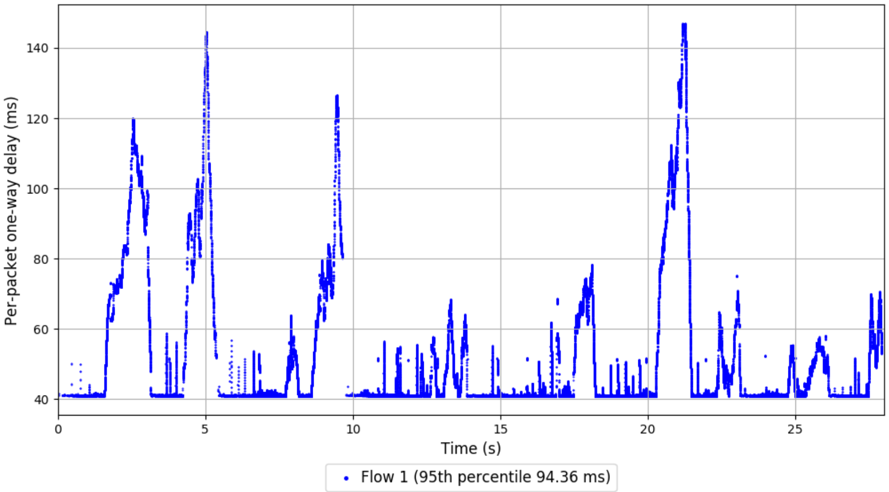




```
Run 7: Statistics of Copa

Start at: 2017-12-05 11:29:56
End at: 2017-12-05 11:30:26
Local clock offset: -0.214 ms
Remote clock offset: -7.688 ms

# Below is generated by plot.py at 2017-12-05 15:52:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.64 Mbit/s
95th percentile per-packet one-way delay: 94.360 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 39.64 Mbit/s
95th percentile per-packet one-way delay: 94.360 ms
Loss rate: 0.40%
```

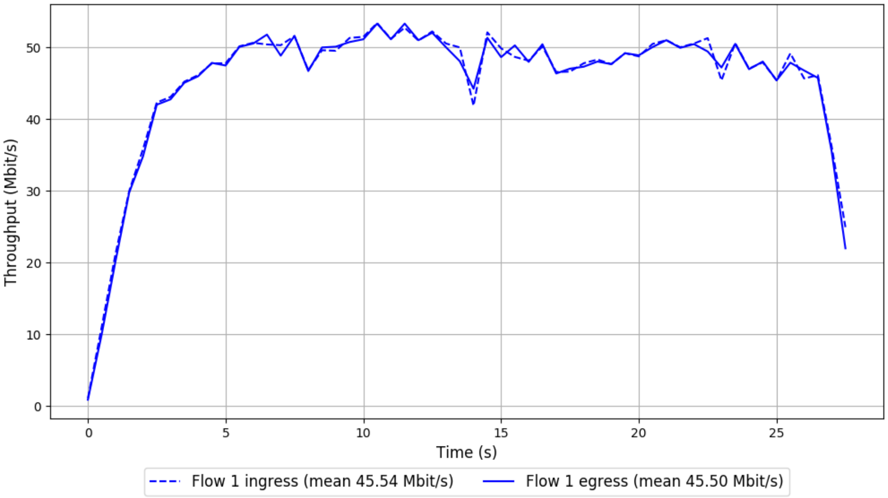
Run 7: Report of Copa — Data Link

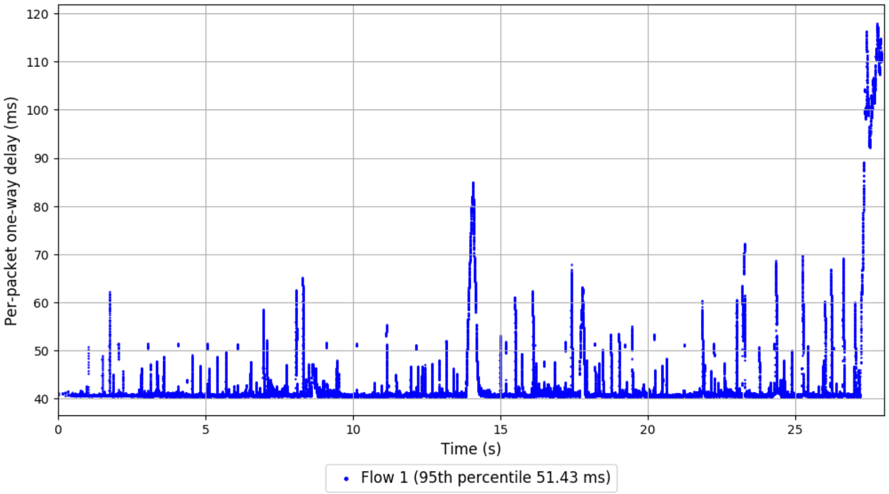




```
Run 8: Statistics of Copa

Start at: 2017-12-05 11:47:03
End at: 2017-12-05 11:47:33
Local clock offset: -0.42 ms
Remote clock offset: -8.408 ms

# Below is generated by plot.py at 2017-12-05 15:52:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.50 Mbit/s
95th percentile per-packet one-way delay: 51.430 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 45.50 Mbit/s
95th percentile per-packet one-way delay: 51.430 ms
Loss rate: 0.41%
```

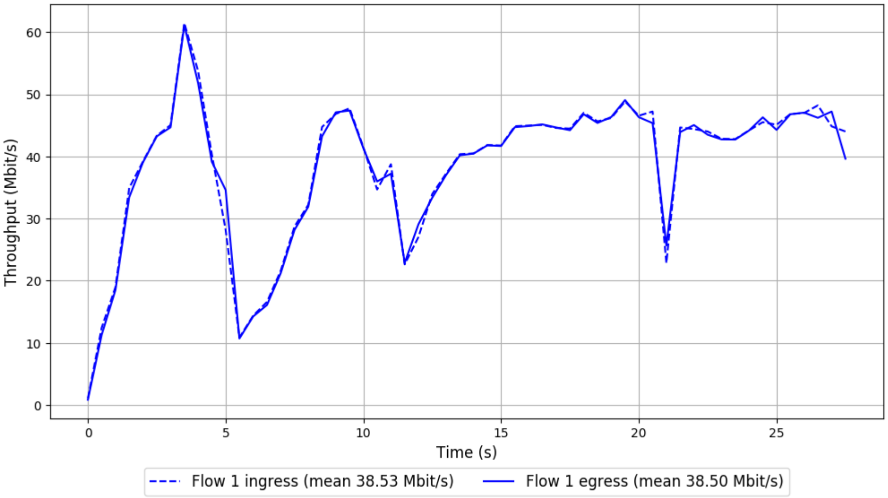
Run 8: Report of Copa — Data Link

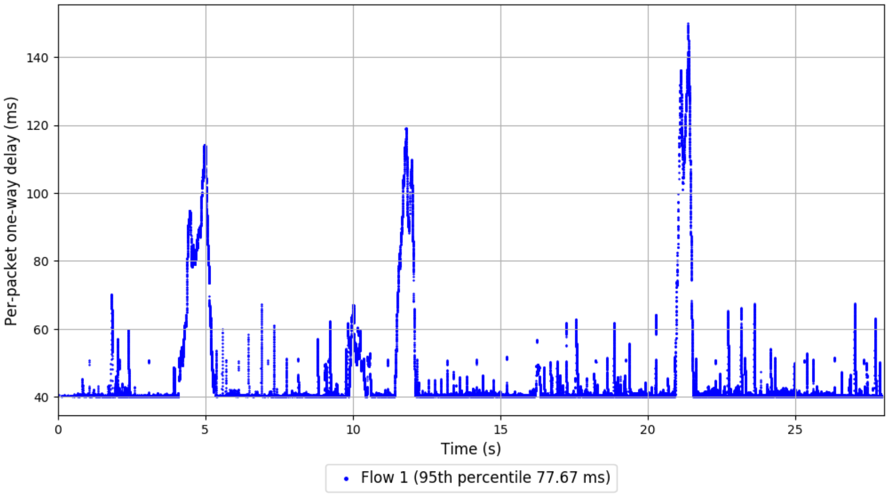




```
Run 9: Statistics of Copa

Start at: 2017-12-05 12:04:52
End at: 2017-12-05 12:05:22
Local clock offset: -0.005 ms
Remote clock offset: -8.174 ms

# Below is generated by plot.py at 2017-12-05 15:52:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 38.50 Mbit/s
95th percentile per-packet one-way delay: 77.675 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 38.50 Mbit/s
95th percentile per-packet one-way delay: 77.675 ms
Loss rate: 0.39%
```

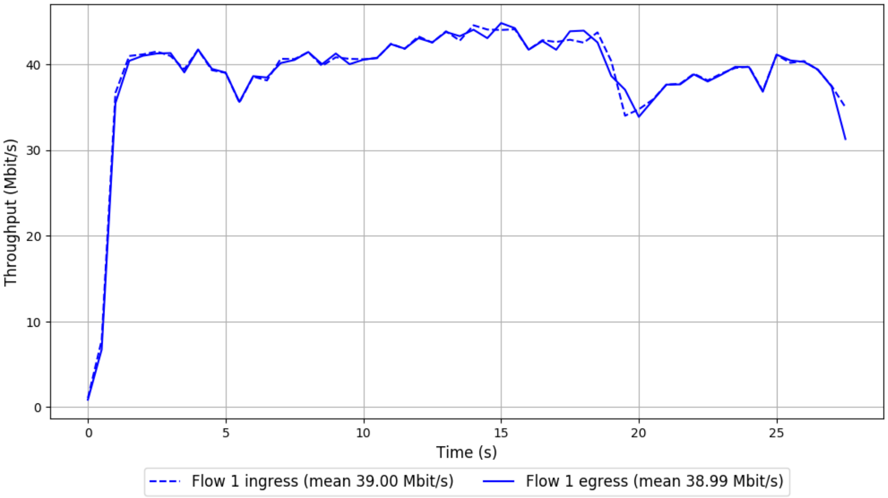
Run 9: Report of Copa — Data Link

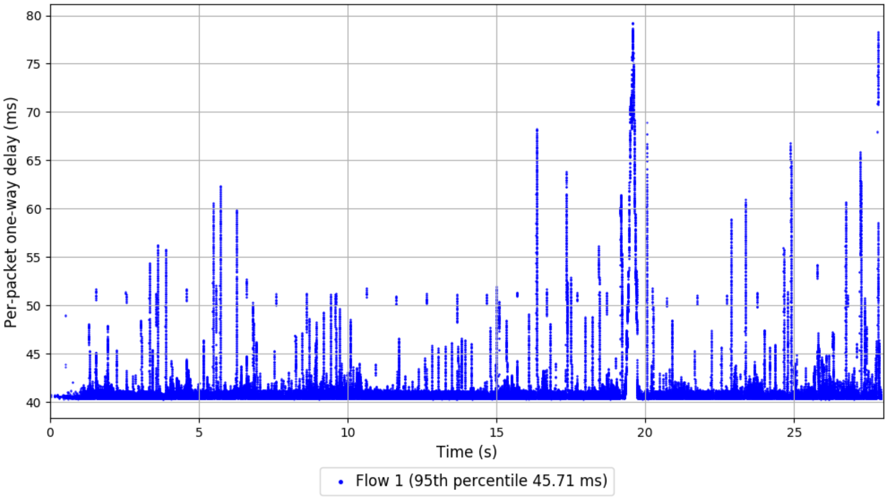




```
Run 10: Statistics of Copa

Start at: 2017-12-05 12:21:53
End at: 2017-12-05 12:22:23
Local clock offset: 0.332 ms
Remote clock offset: -8.012 ms

# Below is generated by plot.py at 2017-12-05 15:53:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 38.99 Mbit/s
95th percentile per-packet one-way delay: 45.714 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 38.99 Mbit/s
95th percentile per-packet one-way delay: 45.714 ms
Loss rate: 0.33%
```

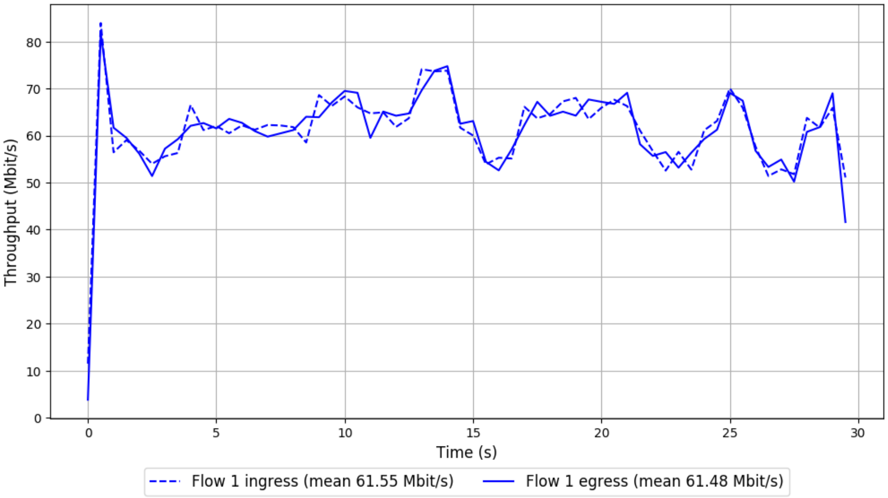
Run 10: Report of Copa — Data Link

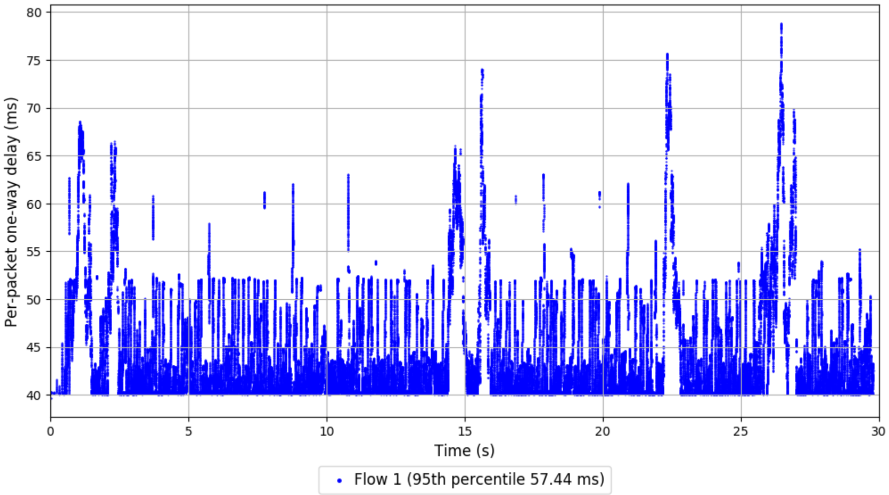




```
Run 1: Statistics of Indigo

Start at: 2017-12-05 10:02:31
End at: 2017-12-05 10:03:01
Local clock offset: 0.763 ms
Remote clock offset: -5.835 ms

# Below is generated by plot.py at 2017-12-05 15:53:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.48 Mbit/s
95th percentile per-packet one-way delay: 57.444 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 61.48 Mbit/s
95th percentile per-packet one-way delay: 57.444 ms
Loss rate: 0.36%
```

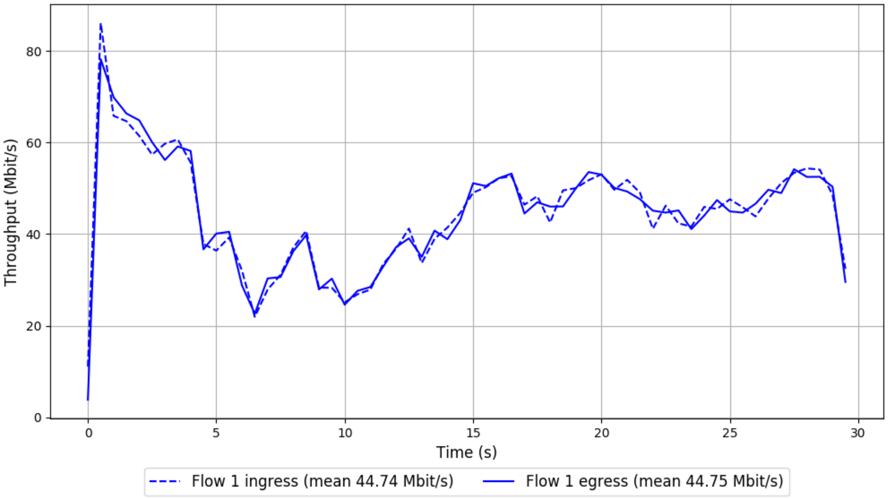
Run 1: Report of Indigo — Data Link

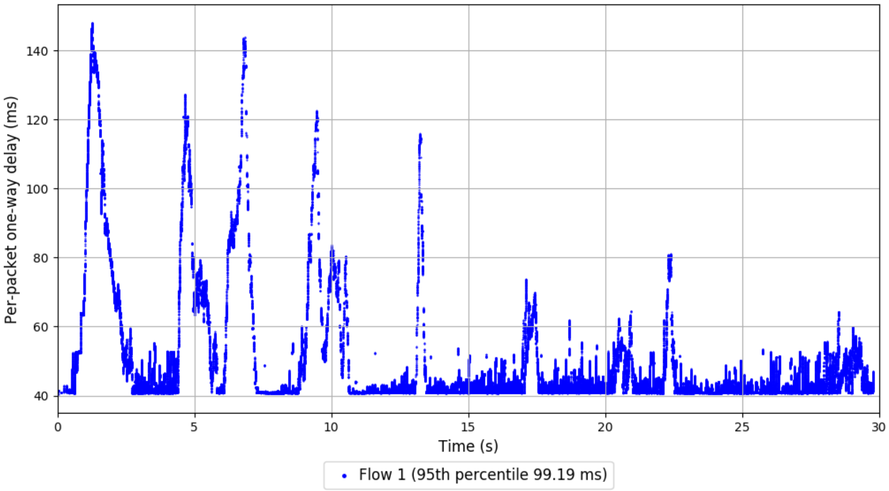




```
Run 2: Statistics of Indigo

Start at: 2017-12-05 10:19:22
End at: 2017-12-05 10:19:52
Local clock offset: 0.895 ms
Remote clock offset: -5.785 ms

# Below is generated by plot.py at 2017-12-05 15:53:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.75 Mbit/s
95th percentile per-packet one-way delay: 99.190 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 44.75 Mbit/s
95th percentile per-packet one-way delay: 99.190 ms
Loss rate: 0.29%
```

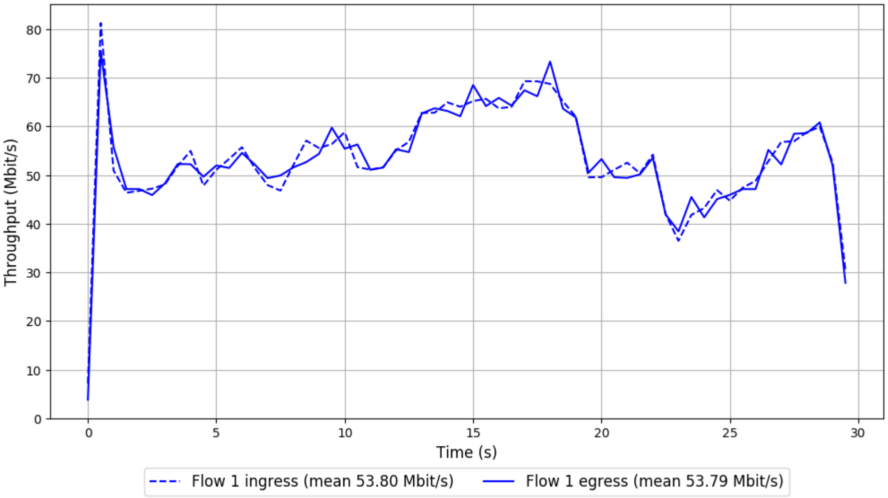
Run 2: Report of Indigo — Data Link

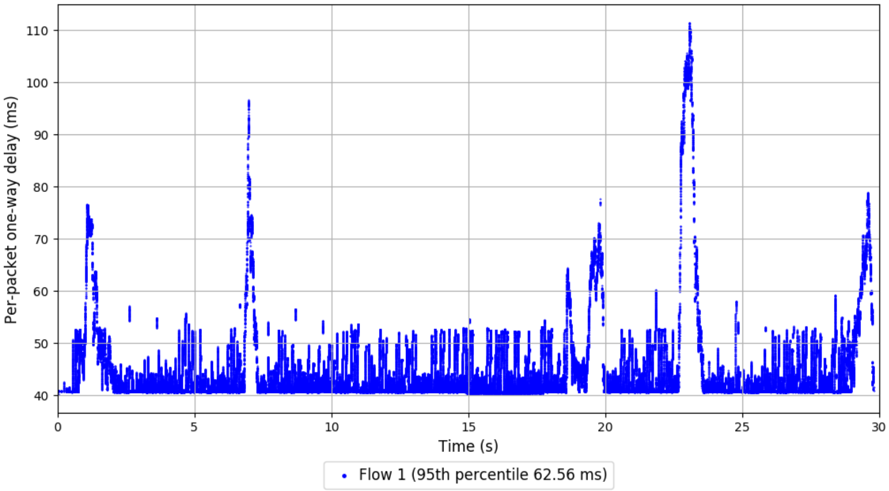




```
Run 3: Statistics of Indigo

Start at: 2017-12-05 10:35:54
End at: 2017-12-05 10:36:24
Local clock offset: 0.421 ms
Remote clock offset: -6.272 ms

# Below is generated by plot.py at 2017-12-05 15:53:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 53.79 Mbit/s
95th percentile per-packet one-way delay: 62.563 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 53.79 Mbit/s
95th percentile per-packet one-way delay: 62.563 ms
Loss rate: 0.28%
```

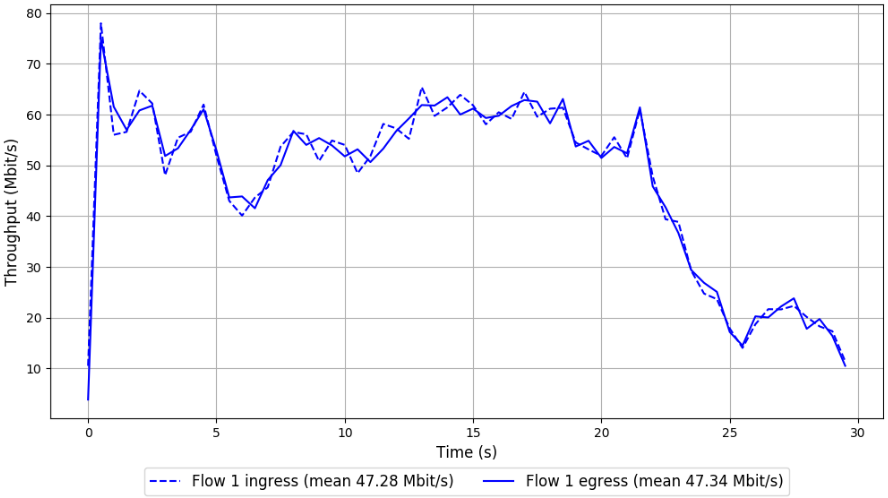
Run 3: Report of Indigo — Data Link

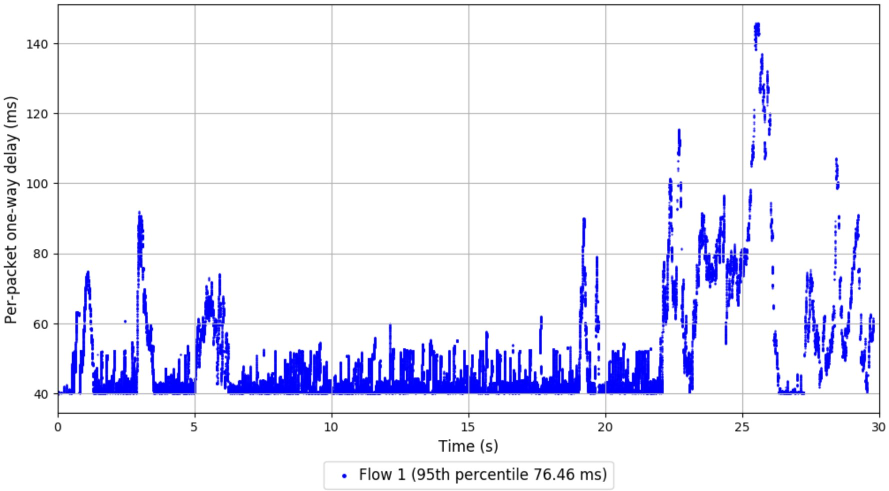




```
Run 4: Statistics of Indigo

Start at: 2017-12-05 10:52:21
End at: 2017-12-05 10:52:51
Local clock offset: -0.162 ms
Remote clock offset: -7.186 ms

# Below is generated by plot.py at 2017-12-05 15:53:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.34 Mbit/s
95th percentile per-packet one-way delay: 76.456 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 47.34 Mbit/s
95th percentile per-packet one-way delay: 76.456 ms
Loss rate: 0.15%
```

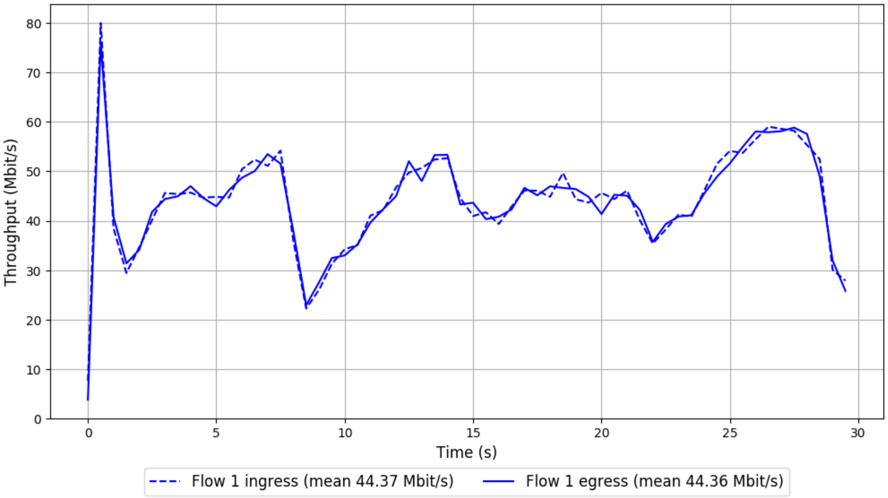
Run 4: Report of Indigo — Data Link

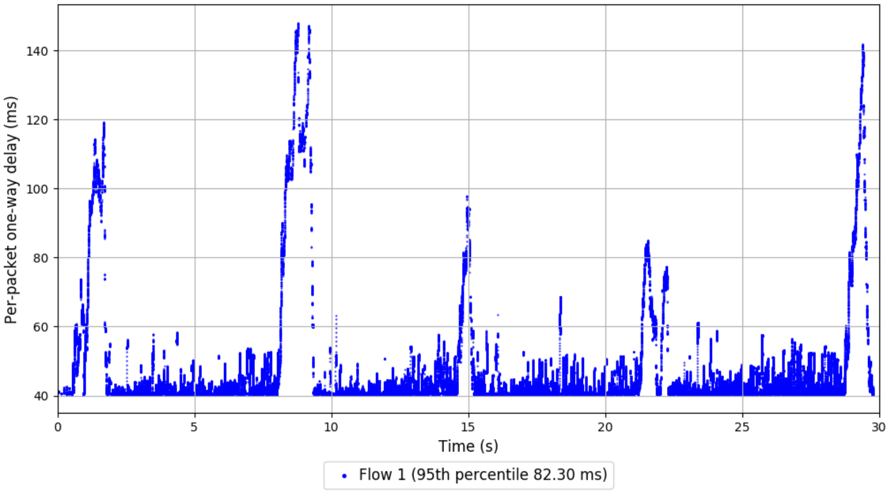




```
Run 5: Statistics of Indigo

Start at: 2017-12-05 11:08:50
End at: 2017-12-05 11:09:20
Local clock offset: -0.365 ms
Remote clock offset: -7.385 ms

# Below is generated by plot.py at 2017-12-05 15:53:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.36 Mbit/s
95th percentile per-packet one-way delay: 82.297 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 44.36 Mbit/s
95th percentile per-packet one-way delay: 82.297 ms
Loss rate: 0.32%
```

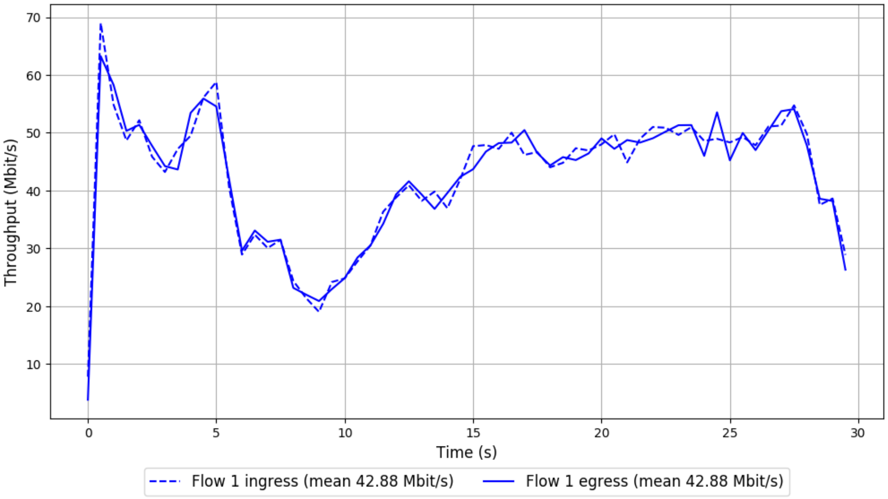
Run 5: Report of Indigo — Data Link

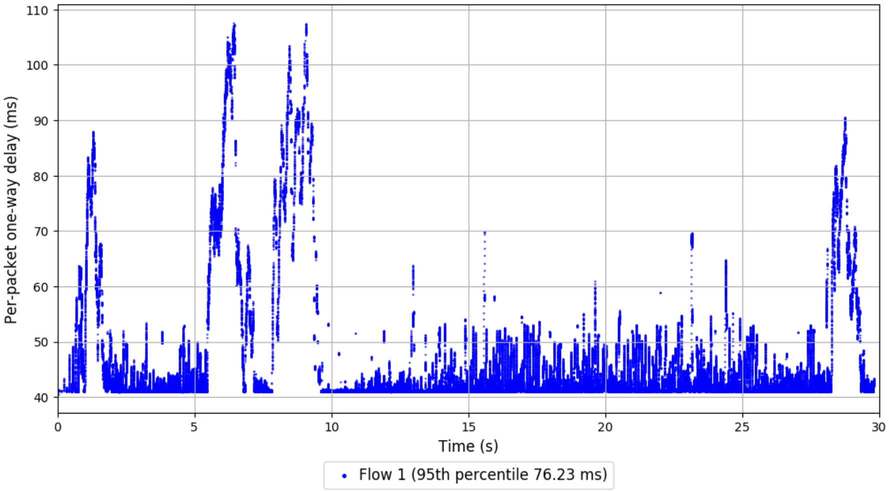




```
Run 6: Statistics of Indigo

Start at: 2017-12-05 11:25:18
End at: 2017-12-05 11:25:48
Local clock offset: -0.024 ms
Remote clock offset: -7.381 ms

# Below is generated by plot.py at 2017-12-05 15:53:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.88 Mbit/s
95th percentile per-packet one-way delay: 76.232 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 42.88 Mbit/s
95th percentile per-packet one-way delay: 76.232 ms
Loss rate: 0.29%
```

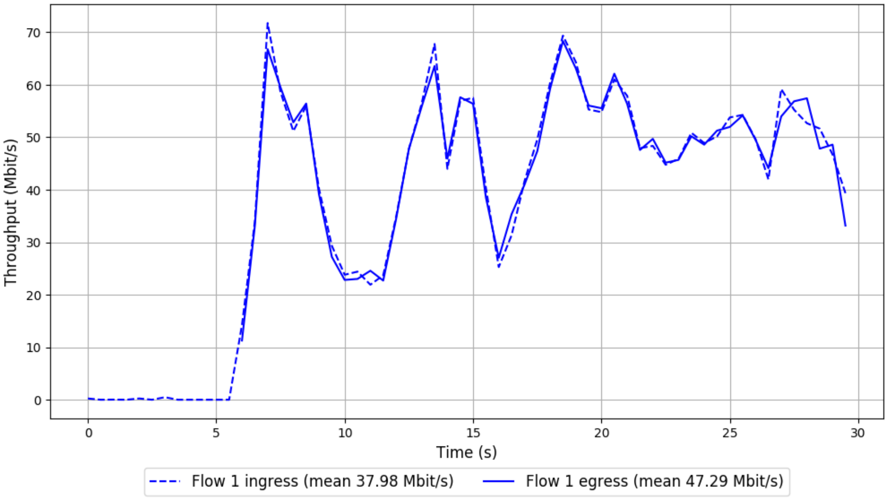
Run 6: Report of Indigo — Data Link

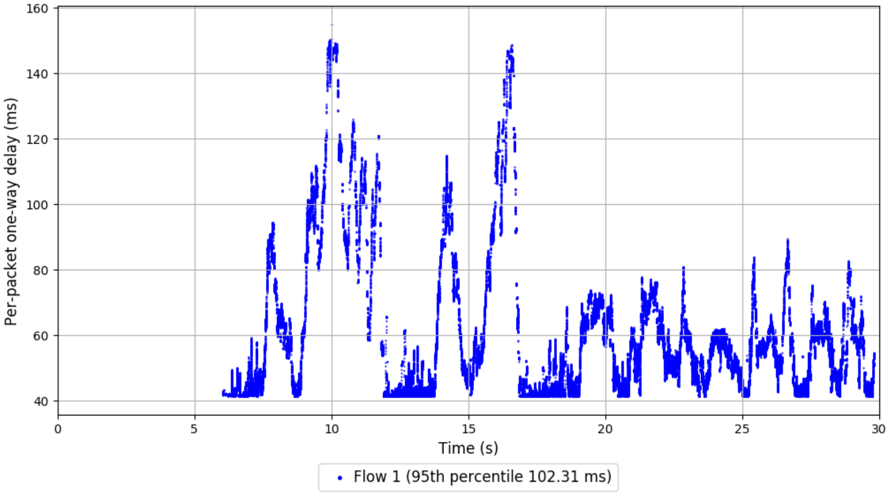




```
Run 7: Statistics of Indigo

Start at: 2017-12-05 11:42:10
End at: 2017-12-05 11:42:40
Local clock offset: -0.261 ms
Remote clock offset: -8.653 ms
```

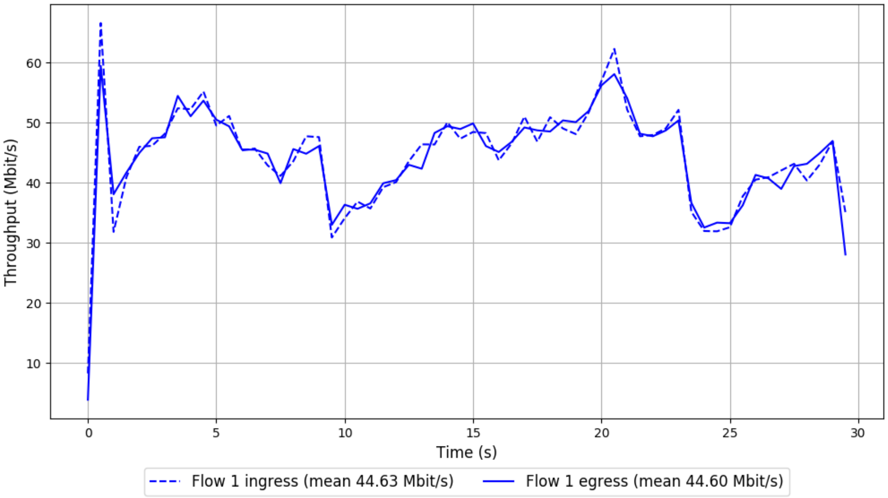
Run 7: Report of Indigo — Data Link

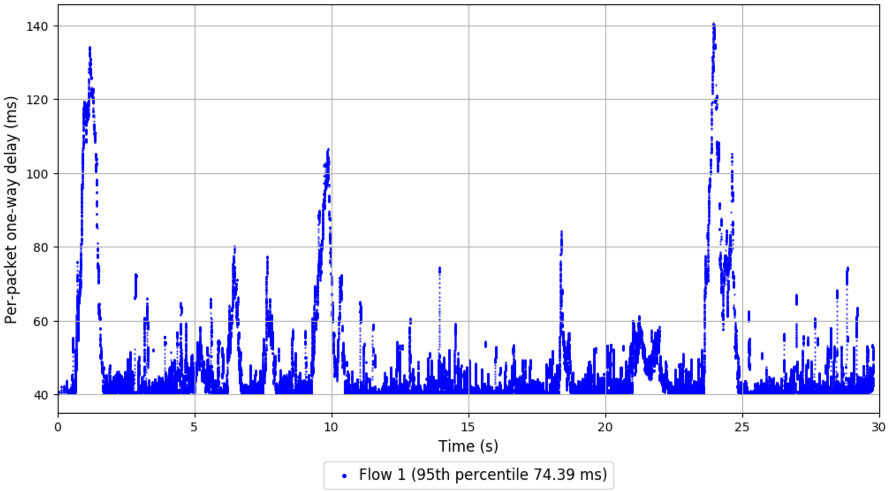




```
Run 8: Statistics of Indigo

Start at: 2017-12-05 12:00:11
End at: 2017-12-05 12:00:41
Local clock offset: -0.132 ms
Remote clock offset: -8.235 ms

# Below is generated by plot.py at 2017-12-05 15:53:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.60 Mbit/s
95th percentile per-packet one-way delay: 74.385 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 44.60 Mbit/s
95th percentile per-packet one-way delay: 74.385 ms
Loss rate: 0.37%
```

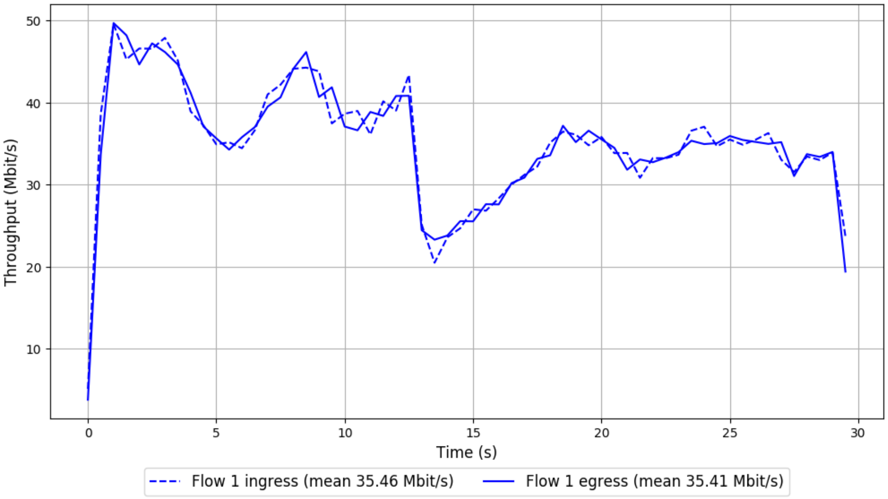
Run 8: Report of Indigo — Data Link

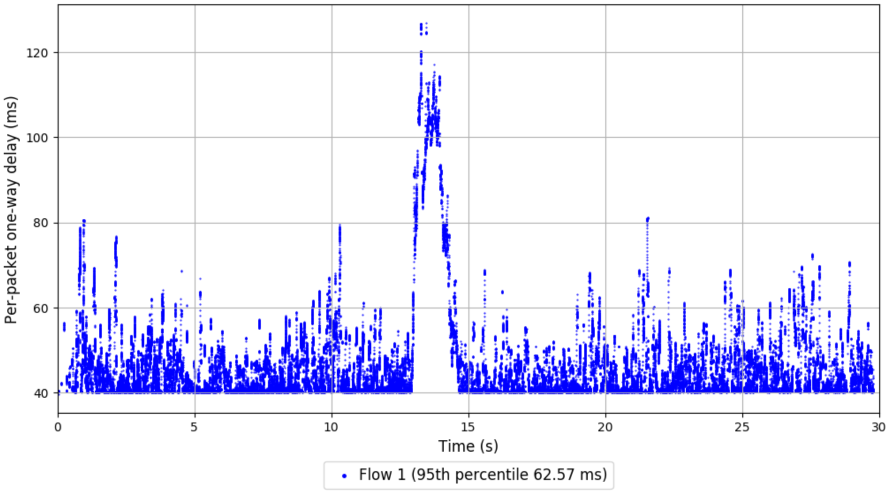




```
Run 9: Statistics of Indigo

Start at: 2017-12-05 12:17:11
End at: 2017-12-05 12:17:41
Local clock offset: 0.209 ms
Remote clock offset: -7.847 ms

# Below is generated by plot.py at 2017-12-05 15:53:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 35.41 Mbit/s
95th percentile per-packet one-way delay: 62.568 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 35.41 Mbit/s
95th percentile per-packet one-way delay: 62.568 ms
Loss rate: 0.43%
```

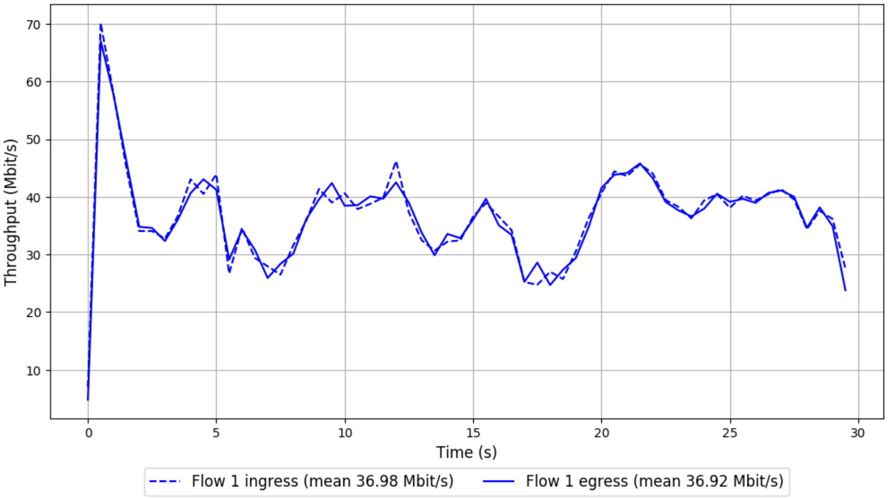
Run 9: Report of Indigo — Data Link

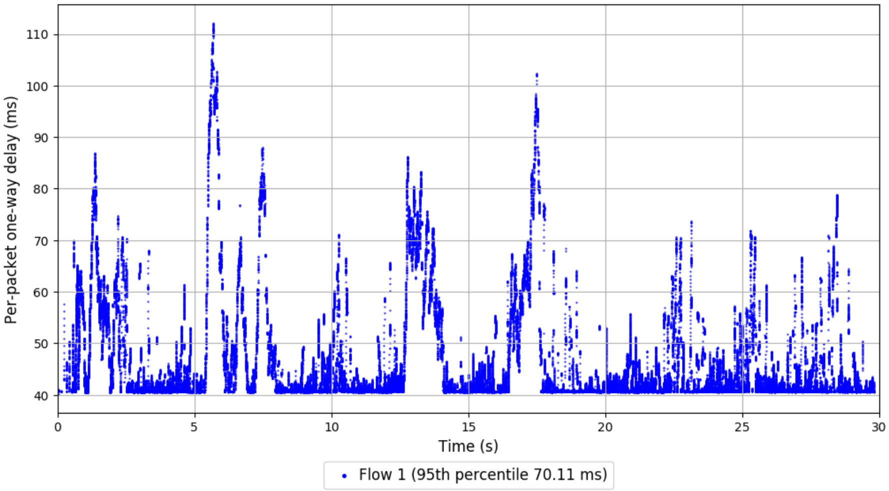




```
Run 10: Statistics of Indigo

Start at: 2017-12-05 12:33:53
End at: 2017-12-05 12:34:23
Local clock offset: 0.541 ms
Remote clock offset: -6.857 ms

# Below is generated by plot.py at 2017-12-05 15:53:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 36.92 Mbit/s
95th percentile per-packet one-way delay: 70.110 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 36.92 Mbit/s
95th percentile per-packet one-way delay: 70.110 ms
Loss rate: 0.45%
```

Run 10: Report of Indigo — Data Link





Run 1: Statistics of Indigo-calib

```
/home/ubuntu/pantheon_data/2017-12-05T09-47-China-to-AWS-Korea-10-runs/indigo_no_calibratio
```

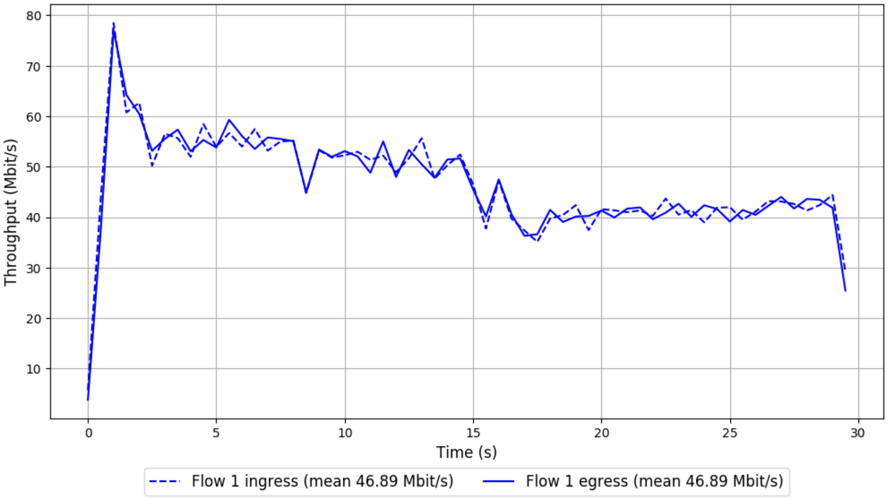
Run 1: Report of Indigo-calib — Data Link

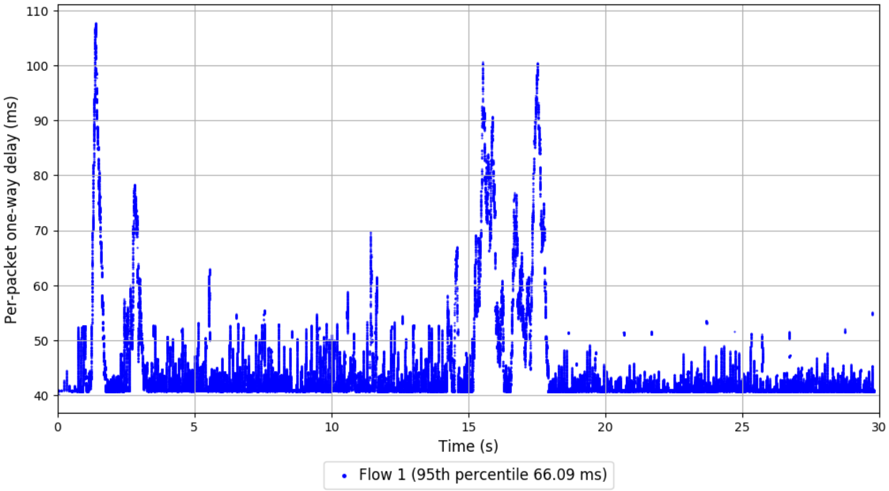
Figure is missing

Figure is missing

```
Run 2: Statistics of Indigo-calib

Start at: 2017-12-05 10:14:31
End at: 2017-12-05 10:15:01
Local clock offset: 1.023 ms
Remote clock offset: -5.876 ms

# Below is generated by plot.py at 2017-12-05 15:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.89 Mbit/s
95th percentile per-packet one-way delay: 66.091 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 46.89 Mbit/s
95th percentile per-packet one-way delay: 66.091 ms
Loss rate: 0.28%
```

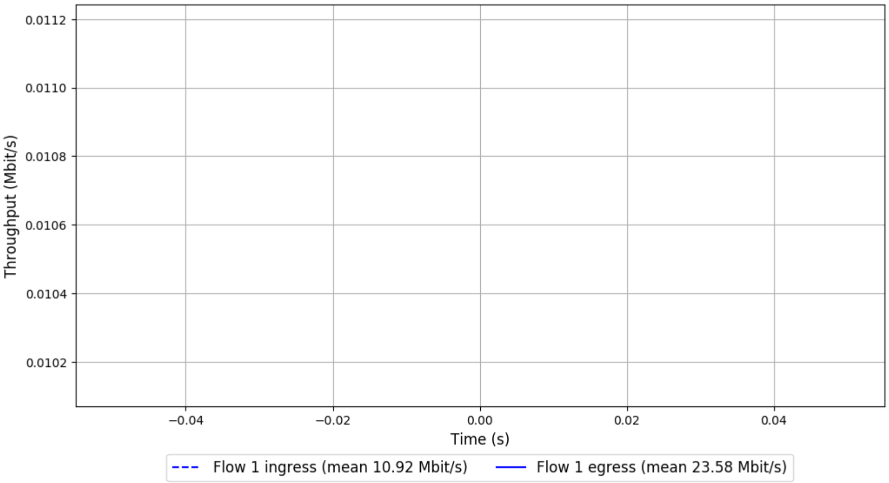
Run 2: Report of Indigo-calib — Data Link

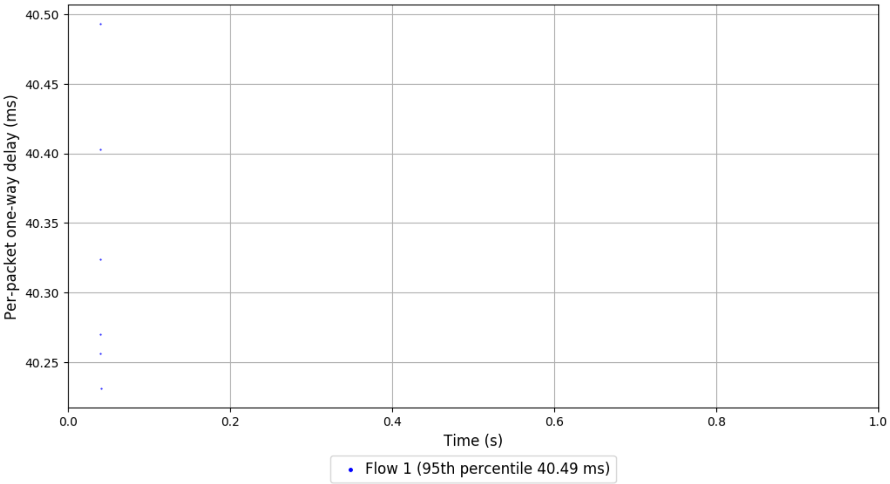




```
Run 3: Statistics of Indigo-calib

Start at: 2017-12-05 10:31:09
End at: 2017-12-05 10:31:39
Local clock offset: 0.693 ms
Remote clock offset: -6.015 ms
```

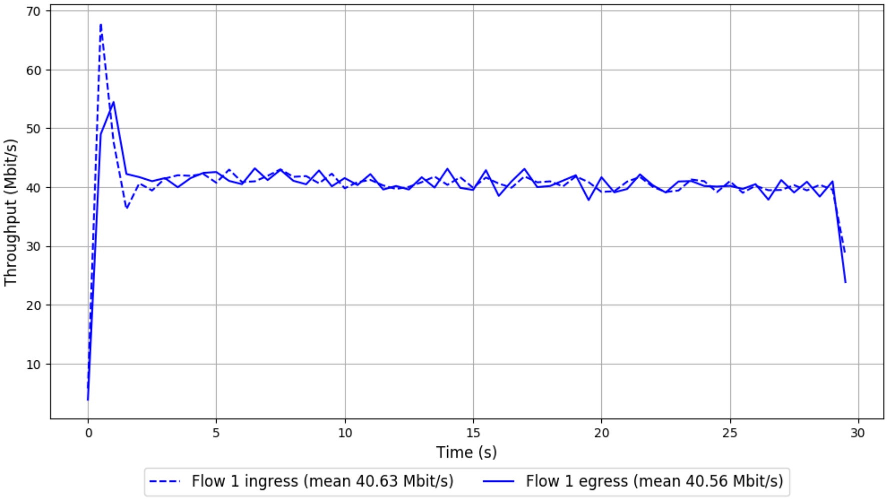
Run 3: Report of Indigo-calib — Data Link

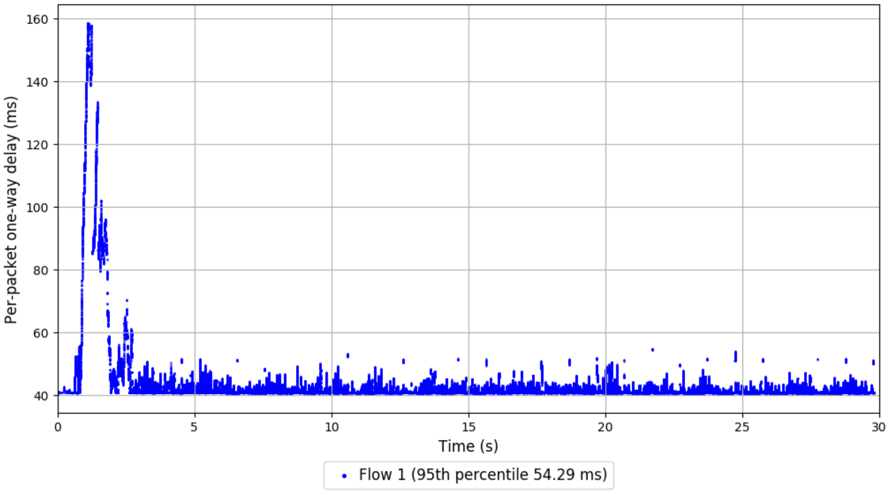




```
Run 4: Statistics of Indigo-calib

Start at: 2017-12-05 10:47:37
End at: 2017-12-05 10:48:07
Local clock offset: -0.022 ms
Remote clock offset: -7.014 ms

# Below is generated by plot.py at 2017-12-05 15:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.56 Mbit/s
95th percentile per-packet one-way delay: 54.289 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 40.56 Mbit/s
95th percentile per-packet one-way delay: 54.289 ms
Loss rate: 0.46%
```

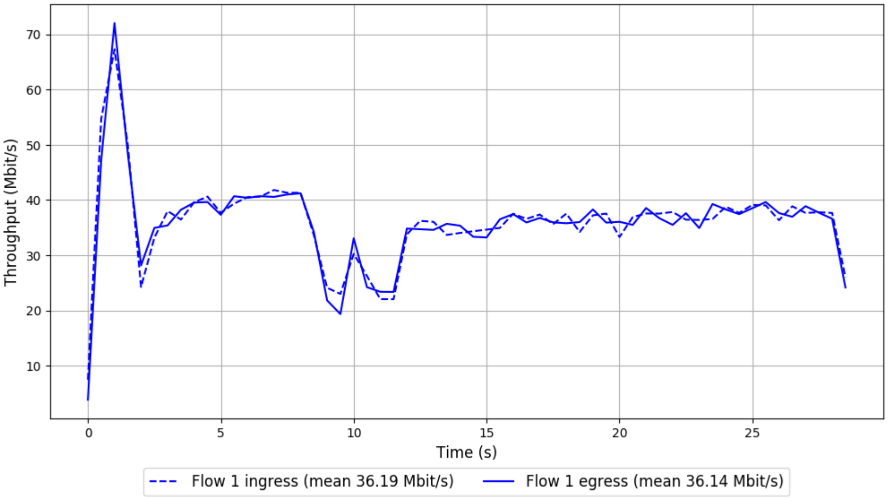
Run 4: Report of Indigo-calib — Data Link

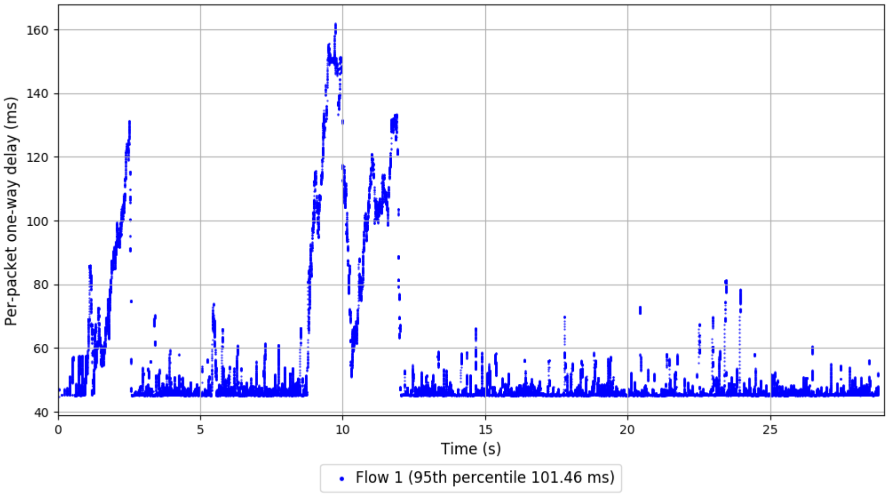




```
Run 5: Statistics of Indigo-calib

Start at: 2017-12-05 11:04:06
End at: 2017-12-05 11:04:36
Local clock offset: -0.139 ms
Remote clock offset: -11.935 ms

# Below is generated by plot.py at 2017-12-05 15:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 36.14 Mbit/s
95th percentile per-packet one-way delay: 101.456 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 36.14 Mbit/s
95th percentile per-packet one-way delay: 101.456 ms
Loss rate: 0.44%
```

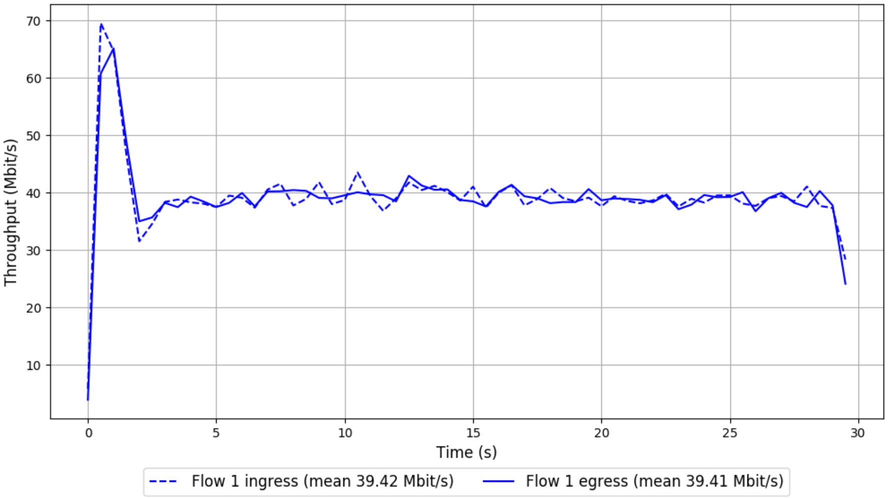
Run 5: Report of Indigo-calib — Data Link

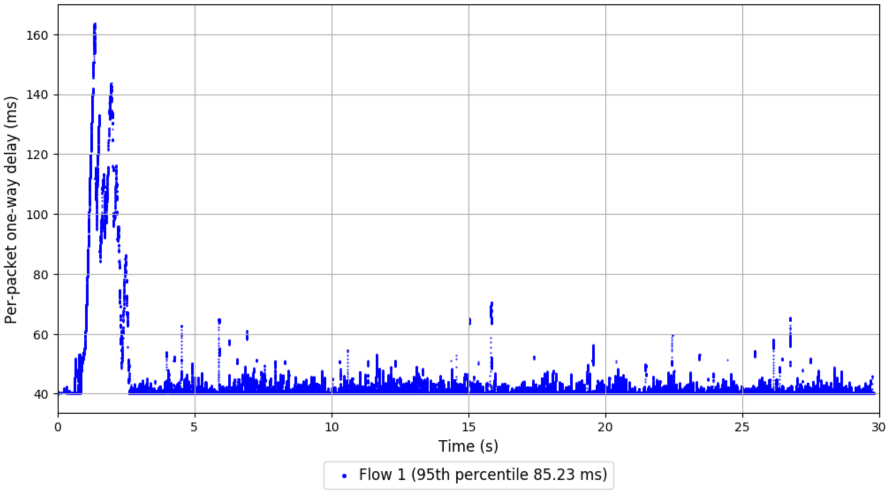




```
Run 6: Statistics of Indigo-calib

Start at: 2017-12-05 11:20:33
End at: 2017-12-05 11:21:03
Local clock offset: -0.169 ms
Remote clock offset: -7.34 ms

# Below is generated by plot.py at 2017-12-05 15:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.41 Mbit/s
95th percentile per-packet one-way delay: 85.235 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 39.41 Mbit/s
95th percentile per-packet one-way delay: 85.235 ms
Loss rate: 0.29%
```

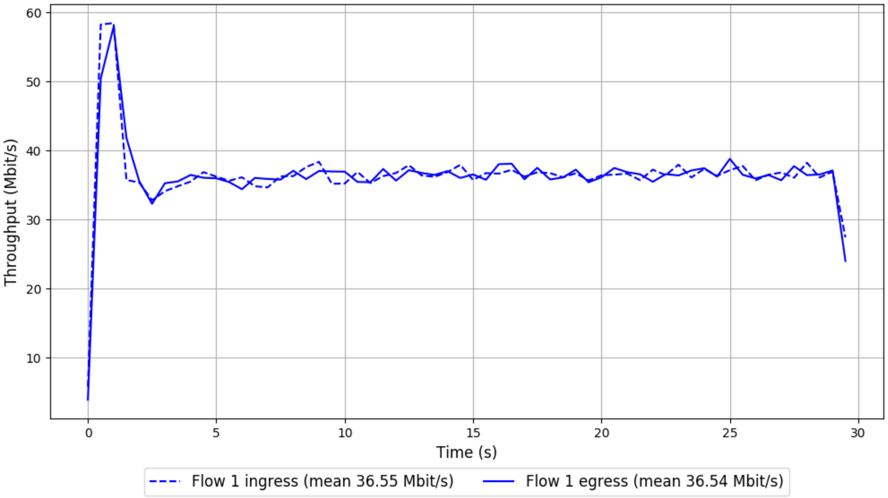
Run 6: Report of Indigo-calib — Data Link

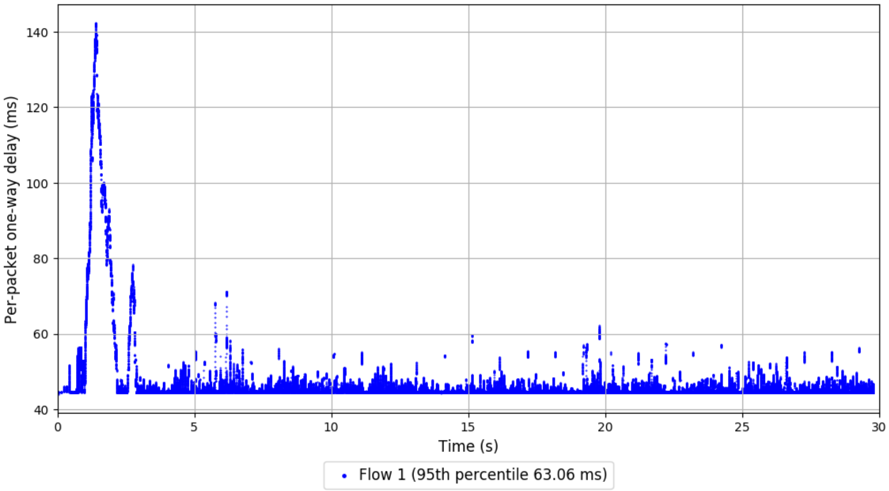




```
Run 7: Statistics of Indigo-calib

Start at: 2017-12-05 11:36:56
End at: 2017-12-05 11:37:26
Local clock offset: -0.195 ms
Remote clock offset: -11.923 ms

# Below is generated by plot.py at 2017-12-05 15:54:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 36.54 Mbit/s
95th percentile per-packet one-way delay: 63.062 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 36.54 Mbit/s
95th percentile per-packet one-way delay: 63.062 ms
Loss rate: 0.32%
```

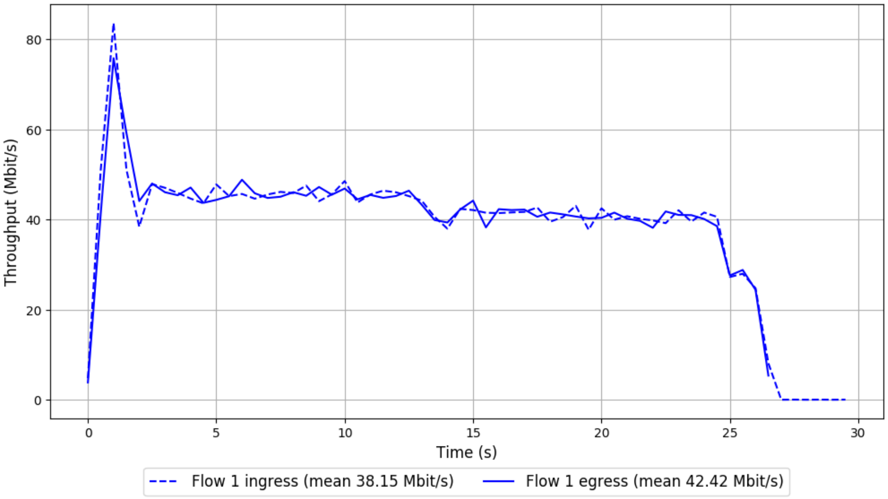
Run 7: Report of Indigo-calib — Data Link

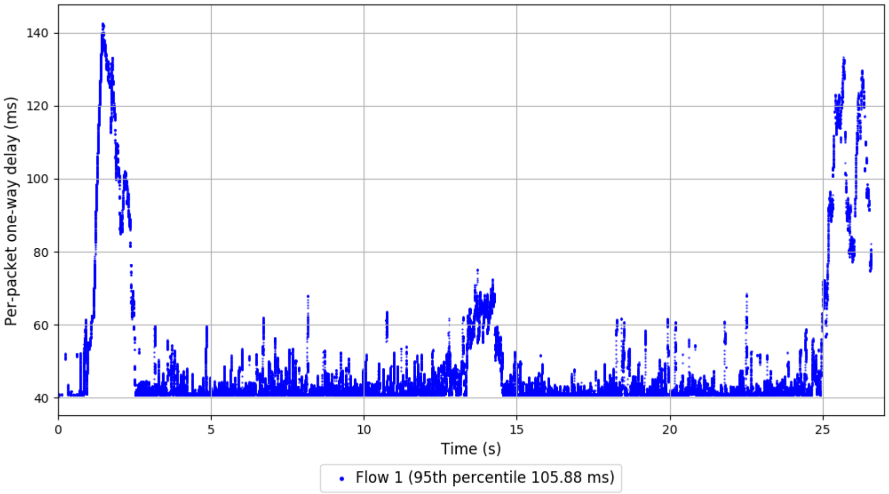




```
Run 8: Statistics of Indigo-calib

Start at: 2017-12-05 11:54:15
End at: 2017-12-05 11:54:45
Local clock offset: -0.171 ms
Remote clock offset: -8.478 ms

# Below is generated by plot.py at 2017-12-05 15:54:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.42 Mbit/s
95th percentile per-packet one-way delay: 105.878 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 42.42 Mbit/s
95th percentile per-packet one-way delay: 105.878 ms
Loss rate: 0.45%
```

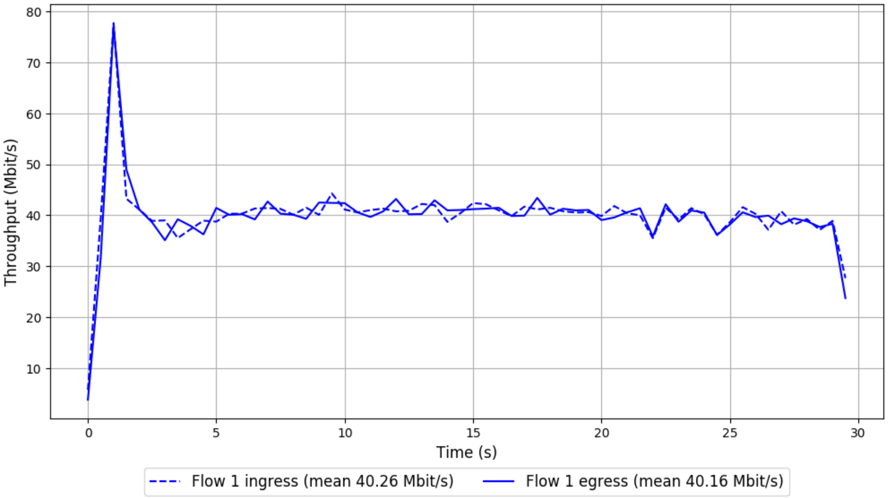
Run 8: Report of Indigo-calib — Data Link

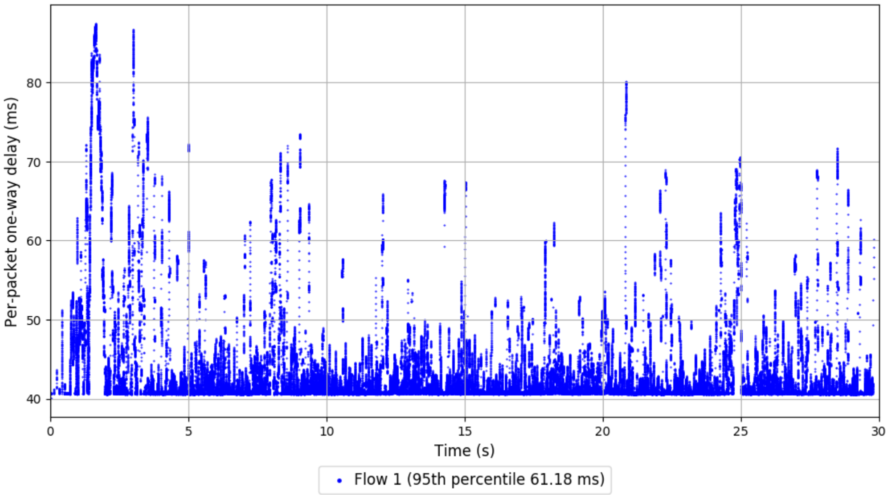




```
Run 9: Statistics of Indigo-calib

Start at: 2017-12-05 12:12:22
End at: 2017-12-05 12:12:53
Local clock offset: 0.172 ms
Remote clock offset: -8.003 ms

# Below is generated by plot.py at 2017-12-05 15:54:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.16 Mbit/s
95th percentile per-packet one-way delay: 61.179 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 40.16 Mbit/s
95th percentile per-packet one-way delay: 61.179 ms
Loss rate: 0.50%
```

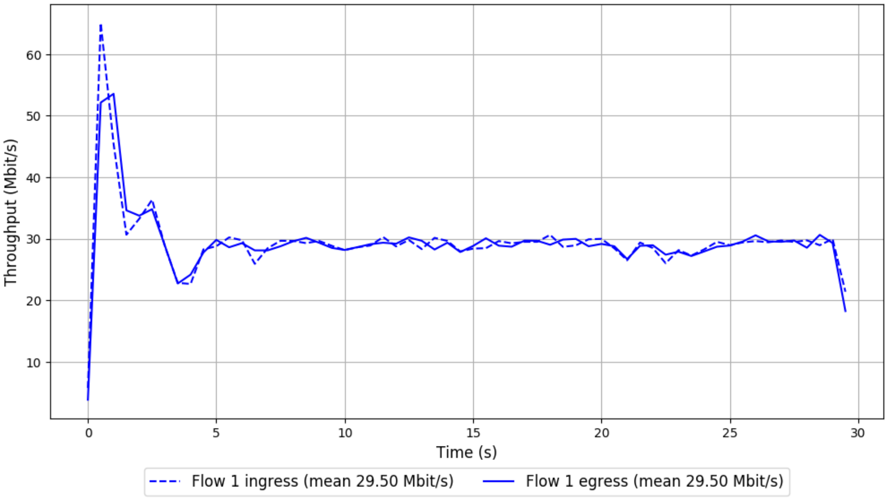
Run 9: Report of Indigo-calib — Data Link



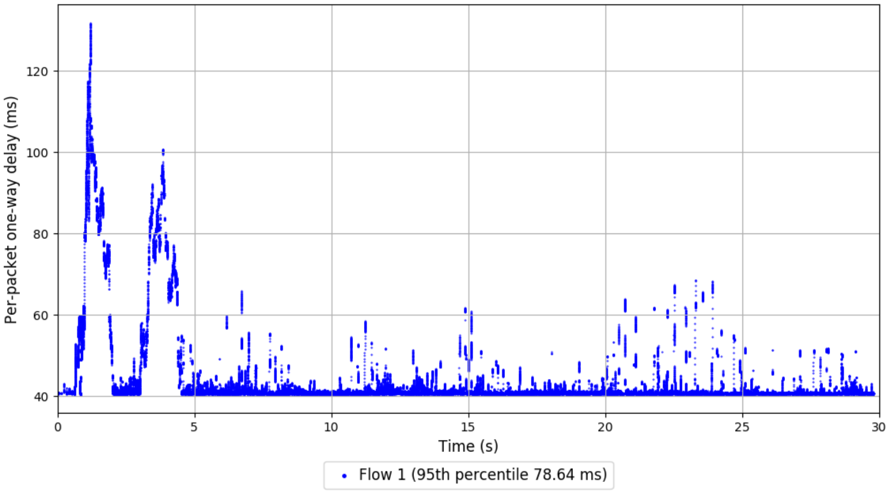


```
Run 10: Statistics of Indigo-calib

Start at: 2017-12-05 12:29:00
End at: 2017-12-05 12:29:31
Local clock offset: 0.609 ms
Remote clock offset: -7.504 ms

# Below is generated by plot.py at 2017-12-05 15:54:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 29.50 Mbit/s
95th percentile per-packet one-way delay: 78.639 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 29.50 Mbit/s
95th percentile per-packet one-way delay: 78.639 ms
Loss rate: 0.31%
```

Run 10: Report of Indigo-calib — Data Link



Throughput (Mbit/s)
10
20
30
40
50
60
0
5
10
15
20
25
30
Time (s)
Flow 1 ingress (mean 29.50 Mbit/s)
Flow 1 egress (mean 29.50 Mbit/s)



Per-packet one-way delay (ms)
40
60
80
100
120
0
5
10
15
20
25
30
Time (s)
Flow 1 (95th percentile 78.64 ms)