

Pantheon Report

Generated at 2018-12-11 00:29:02 (UTC).
Data path: GCE Tokyo on `ens4` (*local*) → GCE London on `ens4` (*remote*).
Repeated the test of 19 congestion control schemes 5 times.
Each test lasted for 30 seconds running 1 flow.
NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.

System info:

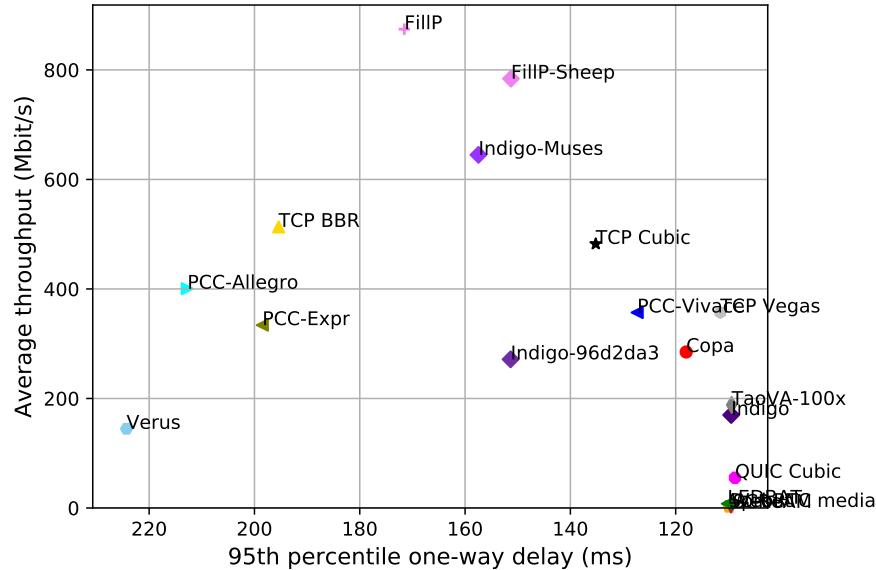
```
Linux 4.15.0-1024-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

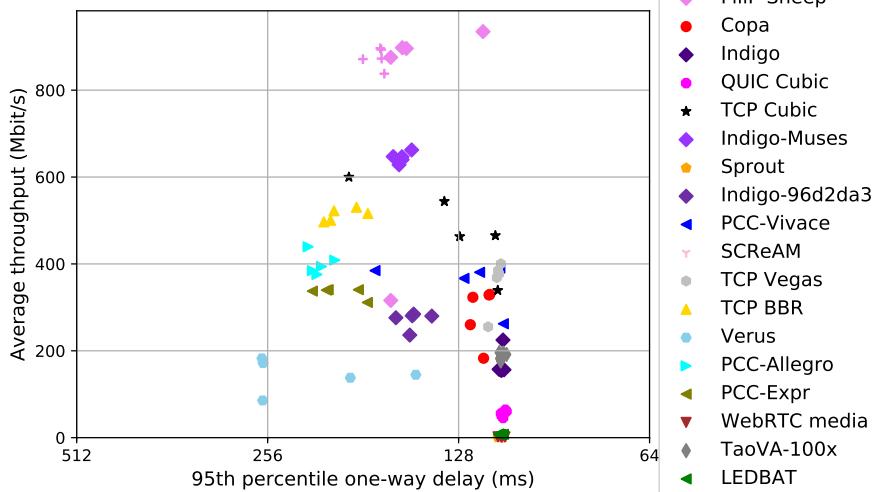
```
branch: muses @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
third_party/fillp @ d6da1459332fce56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
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/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
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/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from GCE Tokyo to GCE London, 5 runs of 30s each per scheme
(mean of all runs by scheme)



test from GCE Tokyo to GCE London, 5 runs of 30s each per scheme



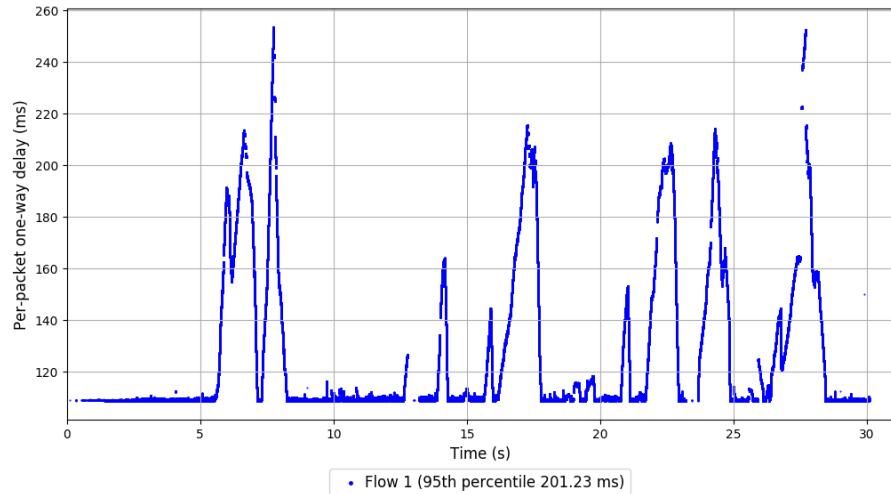
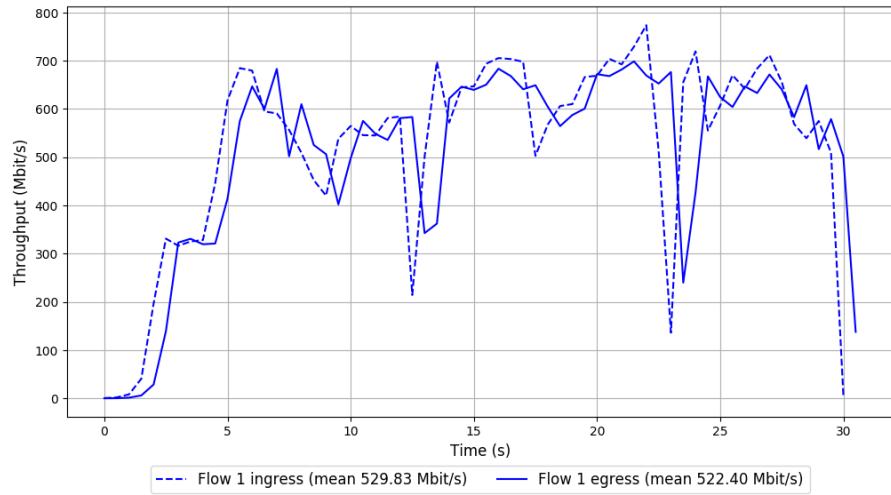
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	513.29	195.42	1.11
Copa	5	284.88	118.00	0.02
TCP Cubic	5	482.25	135.19	0.08
FillP	5	874.37	171.53	2.02
FillP-Sheep	5	784.02	151.28	0.46
Indigo	5	169.79	109.46	0.00
Indigo-96d2da3	5	271.45	151.35	0.21
LEDBAT	5	7.84	110.18	0.00
Indigo-Muses	5	644.91	157.45	0.16
PCC-Allegro	5	400.46	212.74	1.89
PCC-Expr	5	333.94	198.51	2.72
QUIC Cubic	5	55.12	108.73	0.00
SCReAM	5	0.20	109.16	0.00
Sprout	5	1.55	109.87	0.00
TaoVA-100x	5	188.24	109.38	0.00
TCP Vegas	5	357.14	111.53	0.00
Verus	5	144.60	224.30	7.21
PCC-Vivace	5	356.99	127.32	0.06
WebRTC media	5	1.92	109.50	0.00

Run 1: Statistics of TCP BBR

```
Start at: 2018-12-10 20:49:47
End at: 2018-12-10 20:50:17
Local clock offset: 13.427 ms
Remote clock offset: 14.149 ms

# Below is generated by plot.py at 2018-12-10 23:08:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 522.40 Mbit/s
95th percentile per-packet one-way delay: 201.226 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 522.40 Mbit/s
95th percentile per-packet one-way delay: 201.226 ms
Loss rate: 1.40%
```

Run 1: Report of TCP BBR — Data Link

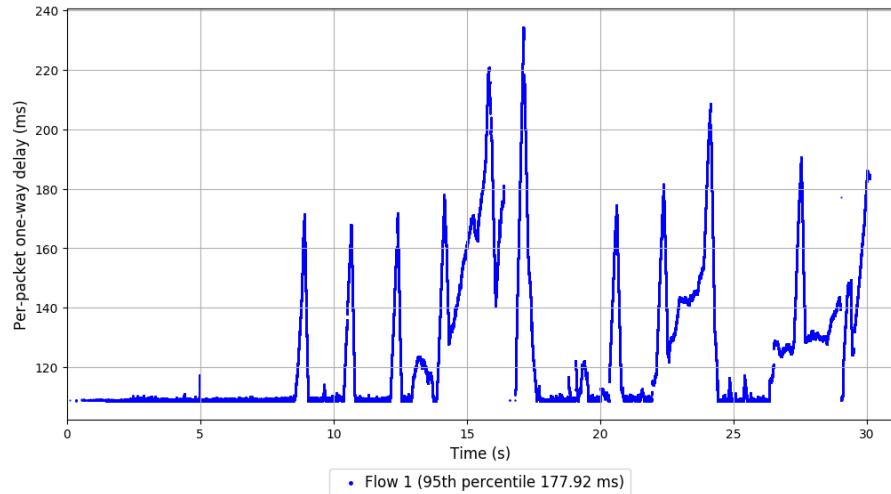
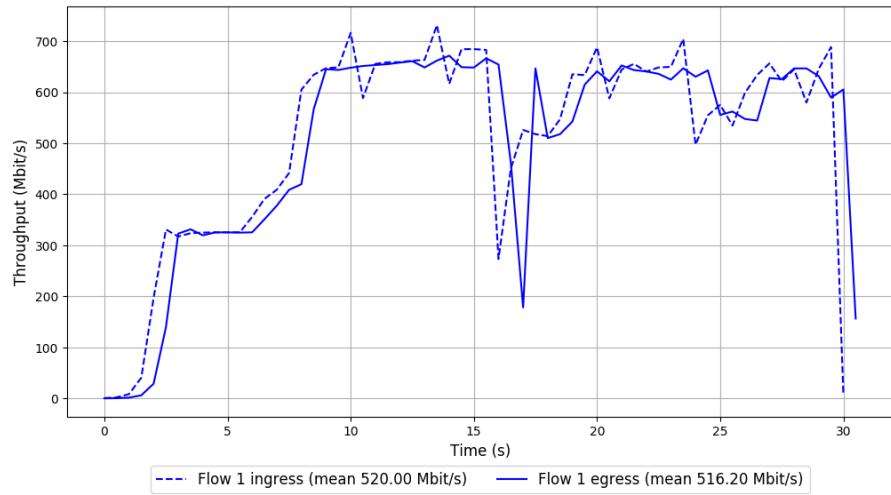


Run 2: Statistics of TCP BBR

```
Start at: 2018-12-10 21:18:01
End at: 2018-12-10 21:18:31
Local clock offset: 22.424 ms
Remote clock offset: 24.344 ms

# Below is generated by plot.py at 2018-12-10 23:08:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 516.20 Mbit/s
95th percentile per-packet one-way delay: 177.919 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 516.20 Mbit/s
95th percentile per-packet one-way delay: 177.919 ms
Loss rate: 0.73%
```

Run 2: Report of TCP BBR — Data Link

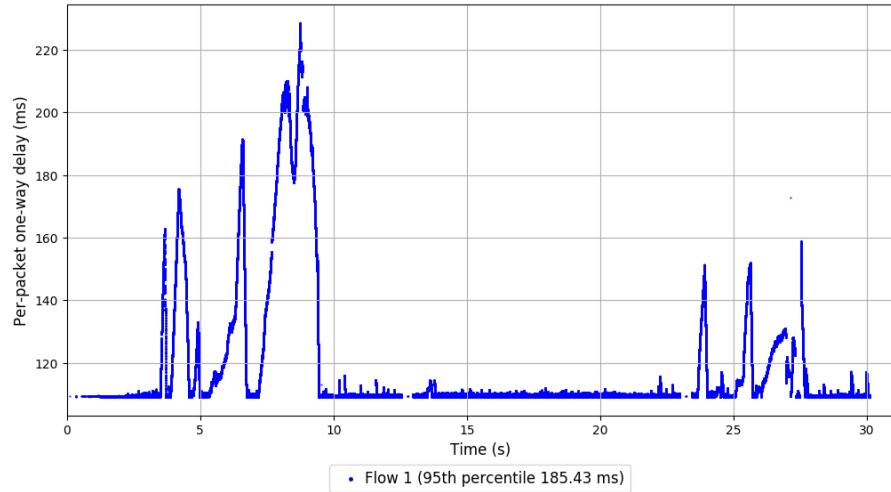
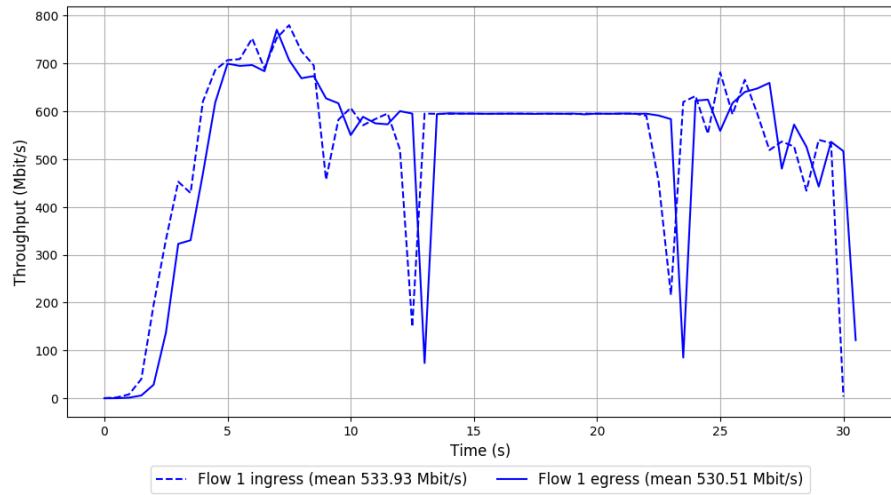


Run 3: Statistics of TCP BBR

```
Start at: 2018-12-10 21:46:27
End at: 2018-12-10 21:46:57
Local clock offset: 13.031 ms
Remote clock offset: 13.921 ms

# Below is generated by plot.py at 2018-12-10 23:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 530.51 Mbit/s
95th percentile per-packet one-way delay: 185.426 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 530.51 Mbit/s
95th percentile per-packet one-way delay: 185.426 ms
Loss rate: 0.64%
```

Run 3: Report of TCP BBR — Data Link

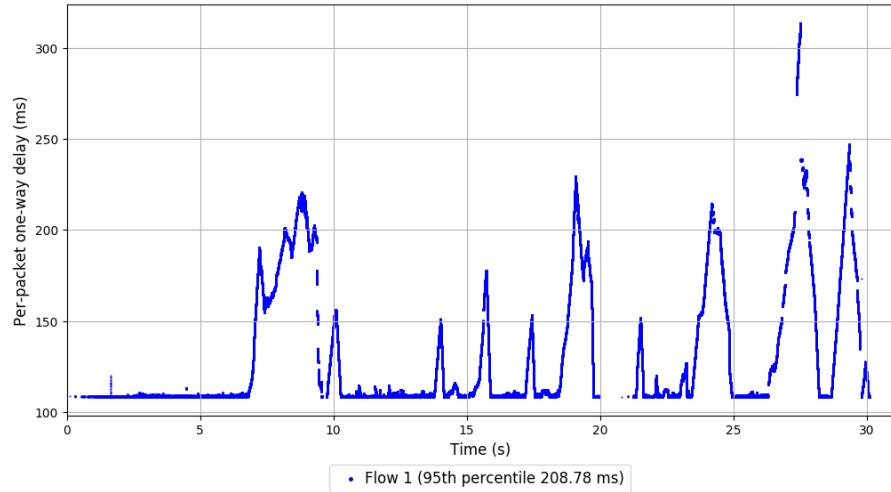
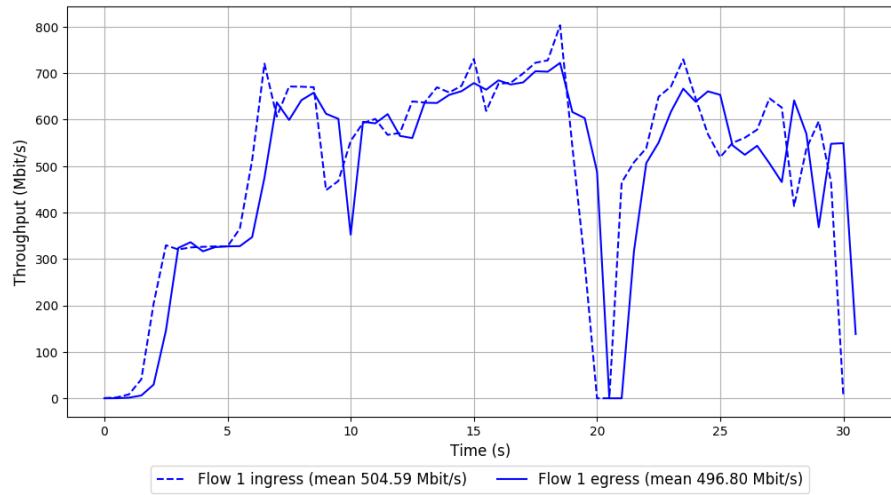


Run 4: Statistics of TCP BBR

```
Start at: 2018-12-10 22:15:02
End at: 2018-12-10 22:15:32
Local clock offset: 5.572 ms
Remote clock offset: 5.995 ms

# Below is generated by plot.py at 2018-12-10 23:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 496.80 Mbit/s
95th percentile per-packet one-way delay: 208.776 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 496.80 Mbit/s
95th percentile per-packet one-way delay: 208.776 ms
Loss rate: 1.54%
```

Run 4: Report of TCP BBR — Data Link

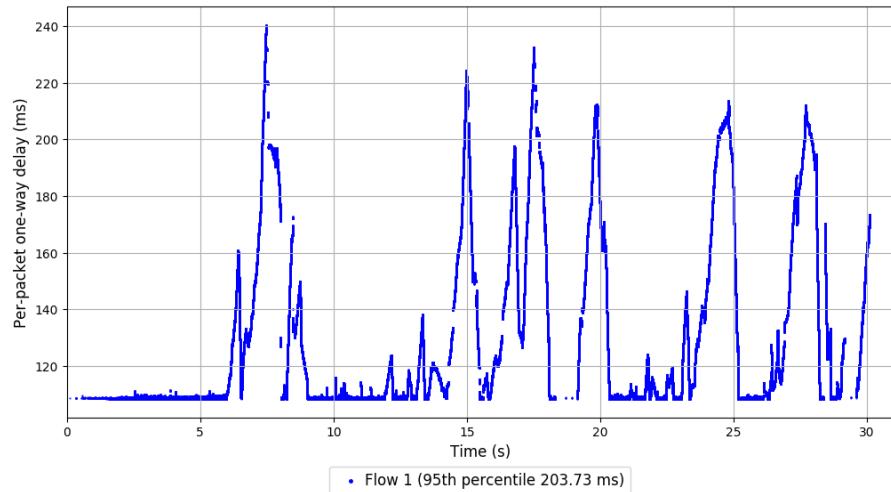
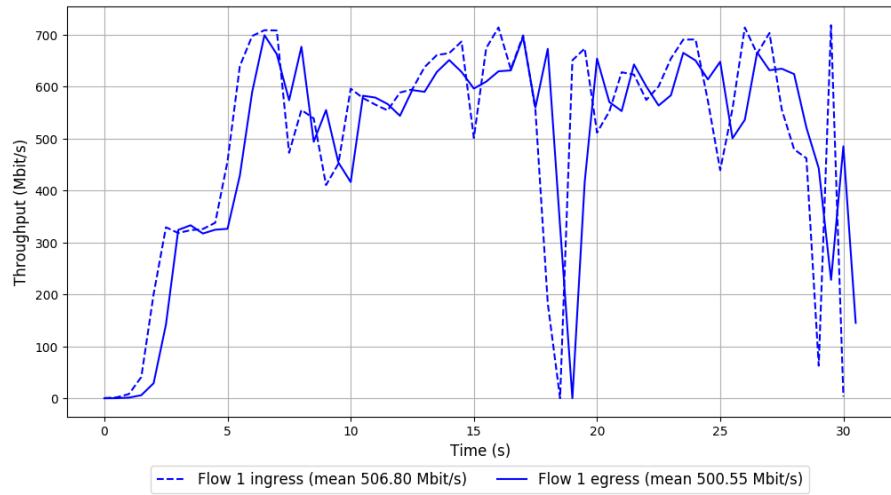


Run 5: Statistics of TCP BBR

```
Start at: 2018-12-10 22:43:31
End at: 2018-12-10 22:44:01
Local clock offset: 4.977 ms
Remote clock offset: 4.544 ms

# Below is generated by plot.py at 2018-12-10 23:09:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 500.55 Mbit/s
95th percentile per-packet one-way delay: 203.733 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 500.55 Mbit/s
95th percentile per-packet one-way delay: 203.733 ms
Loss rate: 1.23%
```

Run 5: Report of TCP BBR — Data Link

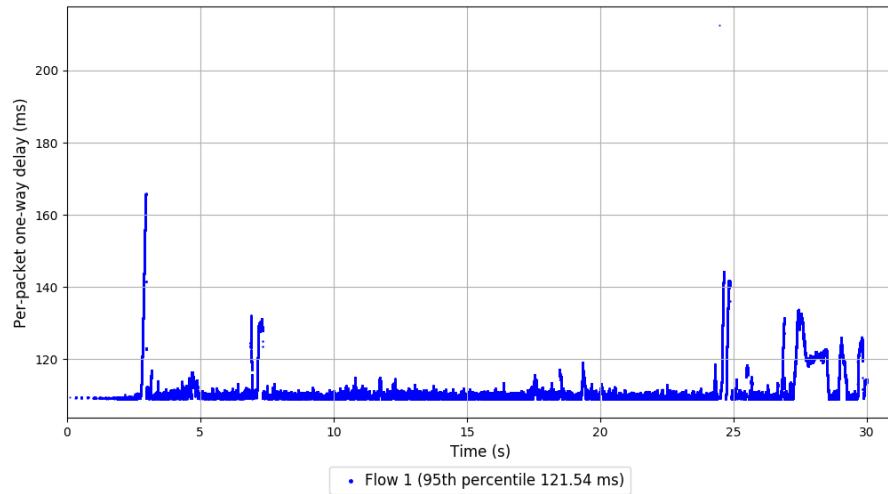
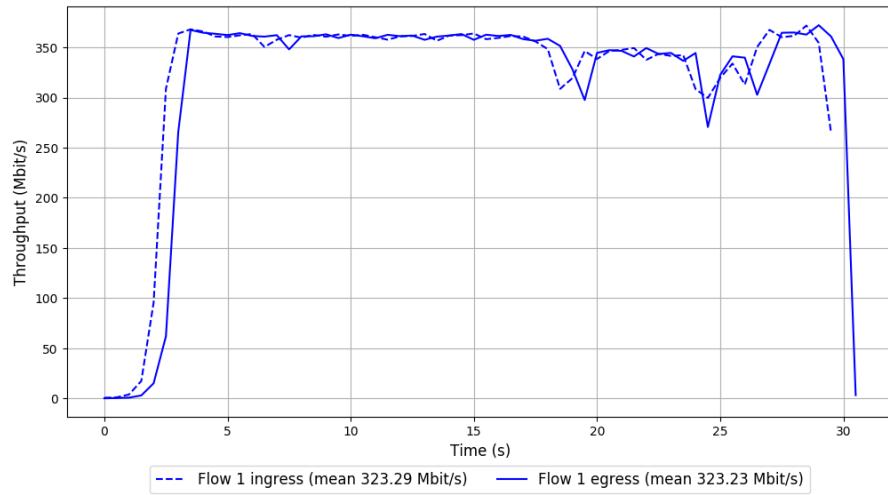


Run 1: Statistics of Copa

```
Start at: 2018-12-10 20:33:30
End at: 2018-12-10 20:34:00
Local clock offset: 7.559 ms
Remote clock offset: 8.306 ms

# Below is generated by plot.py at 2018-12-10 23:09:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 323.23 Mbit/s
95th percentile per-packet one-way delay: 121.537 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 323.23 Mbit/s
95th percentile per-packet one-way delay: 121.537 ms
Loss rate: 0.02%
```

Run 1: Report of Copa — Data Link

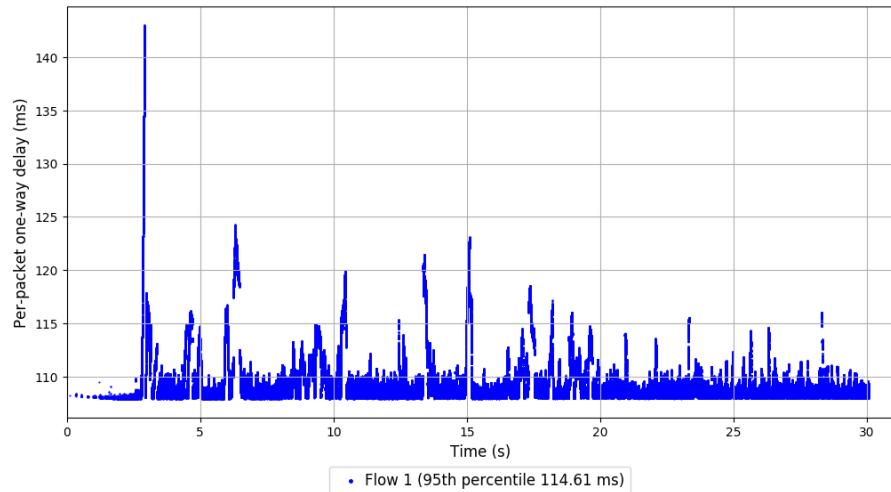
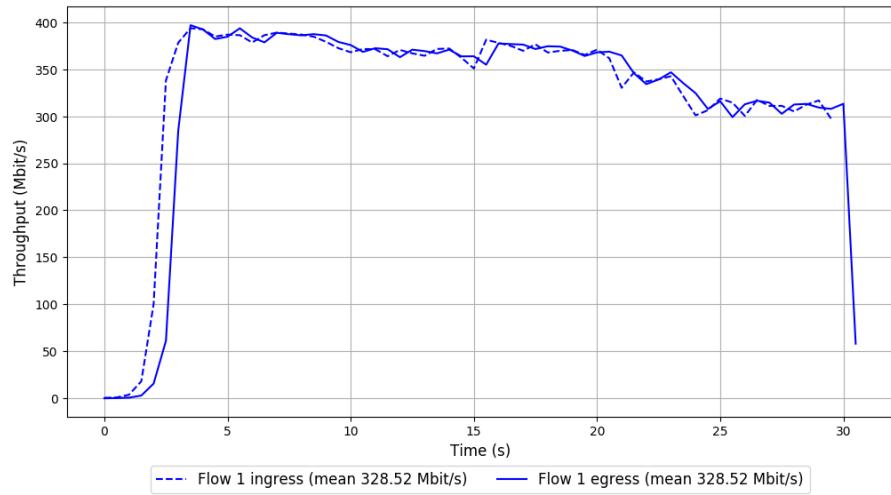


Run 2: Statistics of Copa

```
Start at: 2018-12-10 21:01:47
End at: 2018-12-10 21:02:17
Local clock offset: 24.831 ms
Remote clock offset: 25.972 ms

# Below is generated by plot.py at 2018-12-10 23:10:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 328.52 Mbit/s
95th percentile per-packet one-way delay: 114.609 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 328.52 Mbit/s
95th percentile per-packet one-way delay: 114.609 ms
Loss rate: 0.00%
```

Run 2: Report of Copa — Data Link

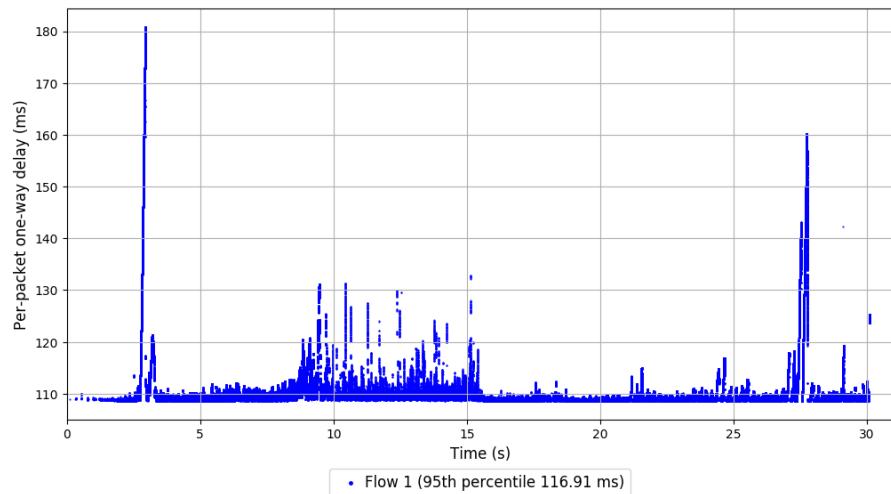
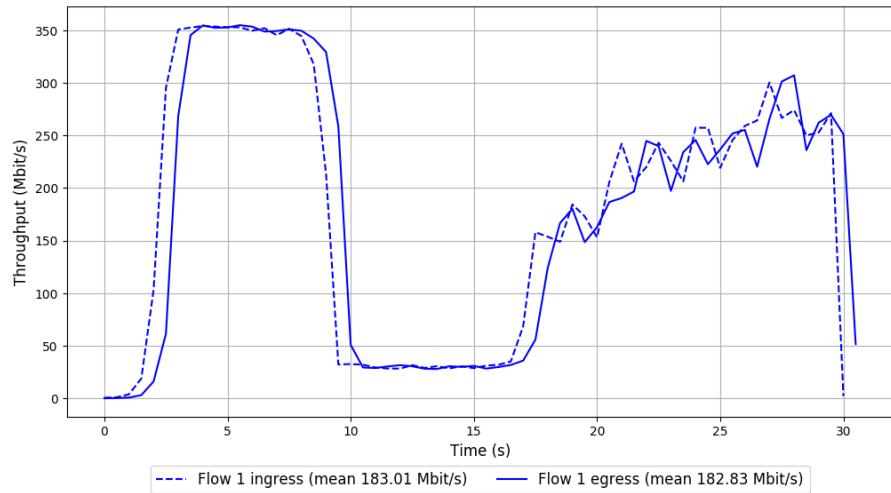


Run 3: Statistics of Copa

```
Start at: 2018-12-10 21:30:11
End at: 2018-12-10 21:30:41
Local clock offset: 32.202 ms
Remote clock offset: 36.009 ms

# Below is generated by plot.py at 2018-12-10 23:10:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 182.83 Mbit/s
95th percentile per-packet one-way delay: 116.908 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 182.83 Mbit/s
95th percentile per-packet one-way delay: 116.908 ms
Loss rate: 0.09%
```

Run 3: Report of Copa — Data Link

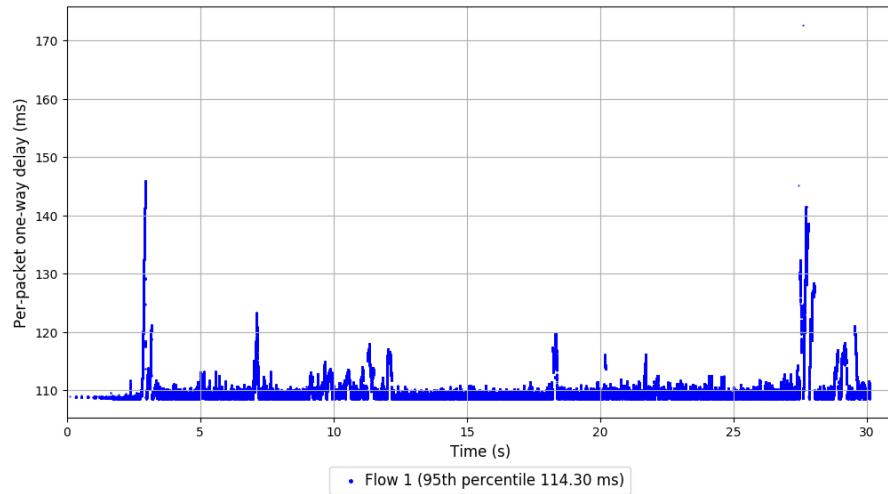
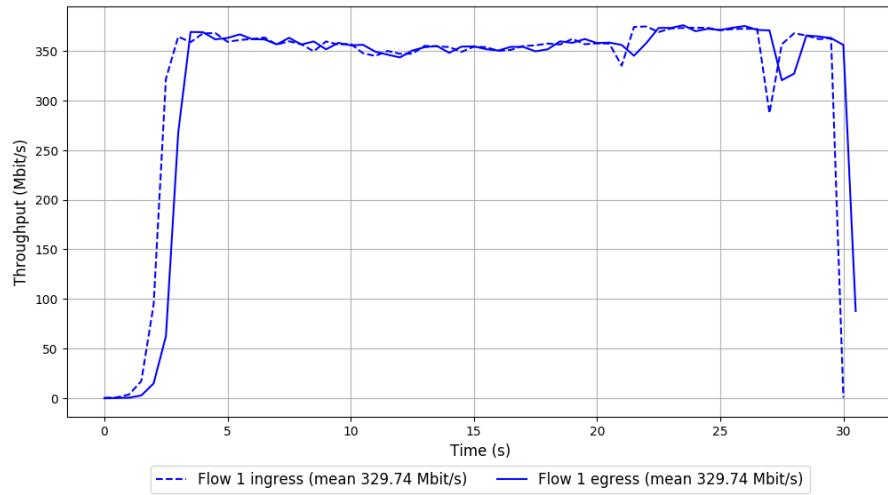


Run 4: Statistics of Copa

```
Start at: 2018-12-10 21:58:36
End at: 2018-12-10 21:59:06
Local clock offset: 9.117 ms
Remote clock offset: 9.249 ms

# Below is generated by plot.py at 2018-12-10 23:16:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 329.74 Mbit/s
95th percentile per-packet one-way delay: 114.299 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 329.74 Mbit/s
95th percentile per-packet one-way delay: 114.299 ms
Loss rate: 0.00%
```

Run 4: Report of Copa — Data Link

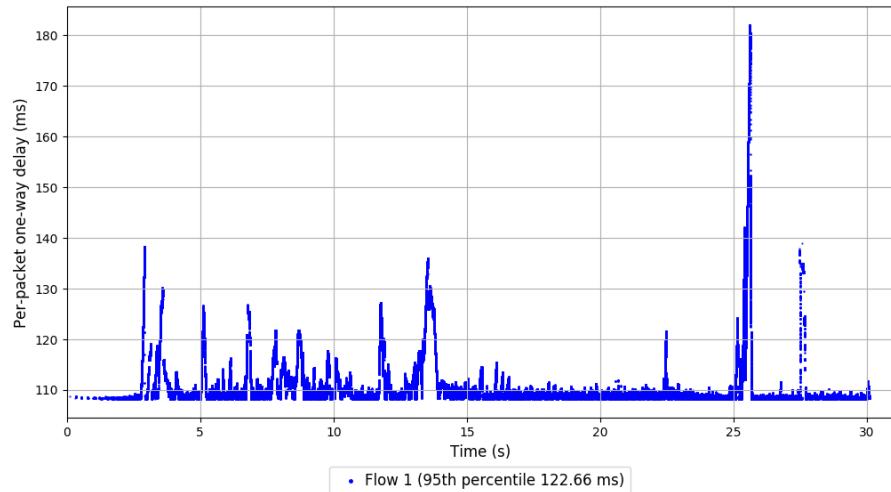
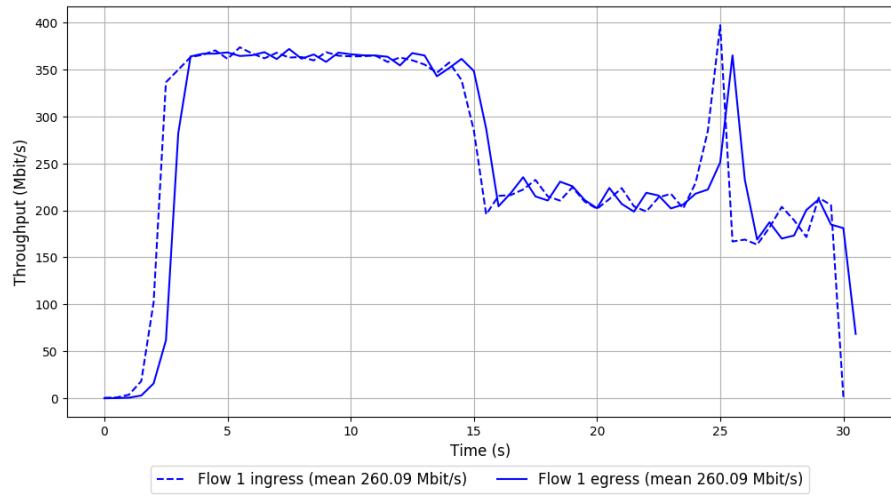


Run 5: Statistics of Copa

```
Start at: 2018-12-10 22:27:08
End at: 2018-12-10 22:27:38
Local clock offset: 4.067 ms
Remote clock offset: 3.597 ms

# Below is generated by plot.py at 2018-12-10 23:17:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 260.09 Mbit/s
95th percentile per-packet one-way delay: 122.660 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 260.09 Mbit/s
95th percentile per-packet one-way delay: 122.660 ms
Loss rate: 0.00%
```

Run 5: Report of Copa — Data Link

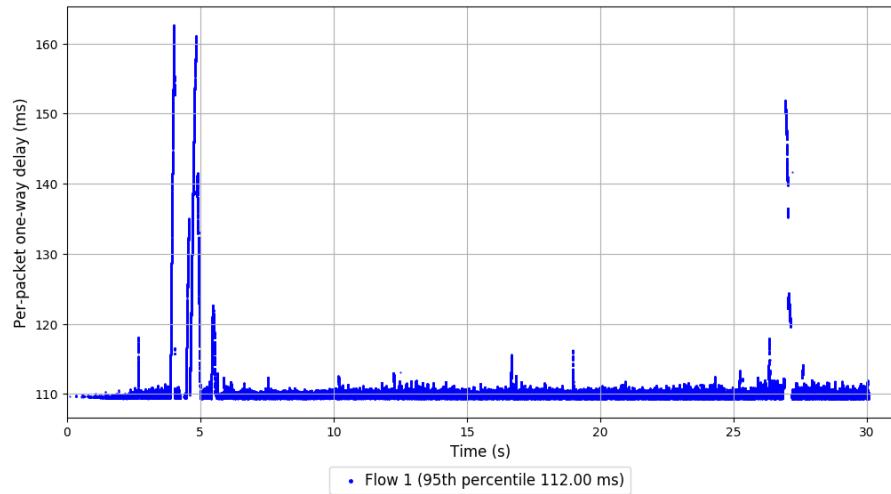
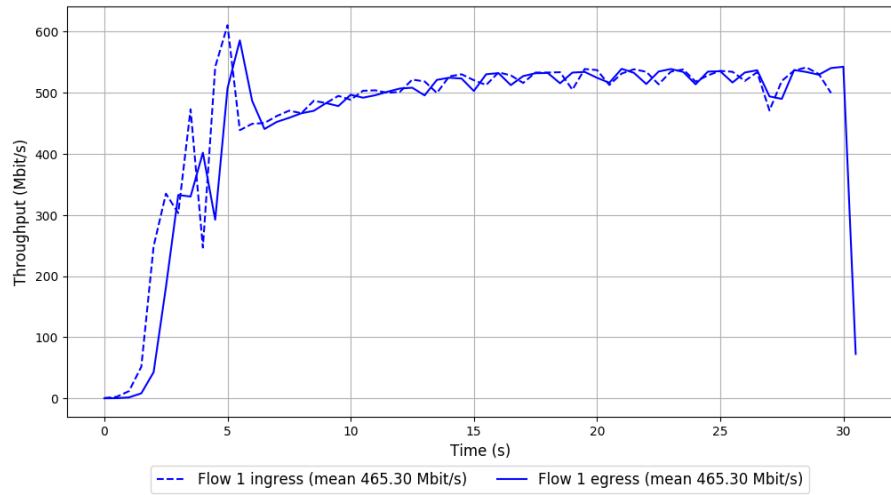


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-12-10 20:42:15
End at: 2018-12-10 20:42:45
Local clock offset: 12.977 ms
Remote clock offset: 15.591 ms

# Below is generated by plot.py at 2018-12-10 23:17:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 465.30 Mbit/s
95th percentile per-packet one-way delay: 111.997 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 465.30 Mbit/s
95th percentile per-packet one-way delay: 111.997 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Cubic — Data Link

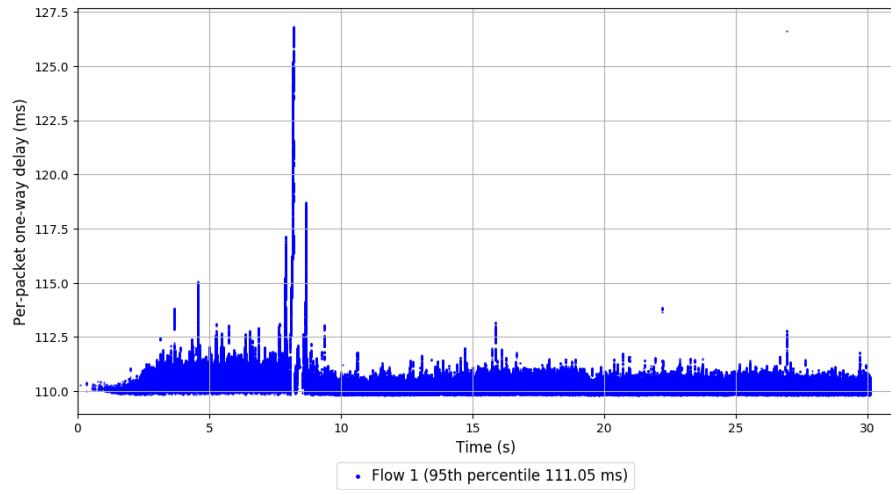
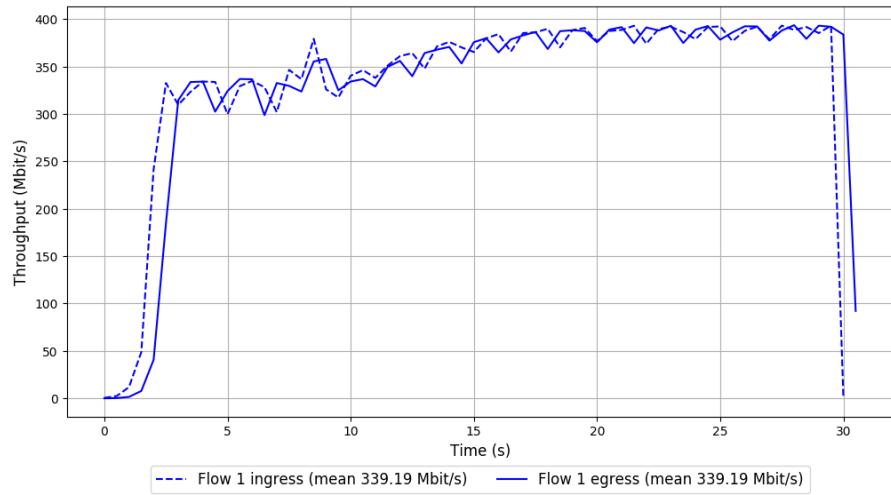


```
Run 2: Statistics of TCP Cubic
```

```
Start at: 2018-12-10 21:10:39
End at: 2018-12-10 21:11:09
Local clock offset: 17.629 ms
Remote clock offset: 20.171 ms

# Below is generated by plot.py at 2018-12-10 23:17:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 339.19 Mbit/s
95th percentile per-packet one-way delay: 111.045 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 339.19 Mbit/s
95th percentile per-packet one-way delay: 111.045 ms
Loss rate: 0.00%
```

Run 2: Report of TCP Cubic — Data Link

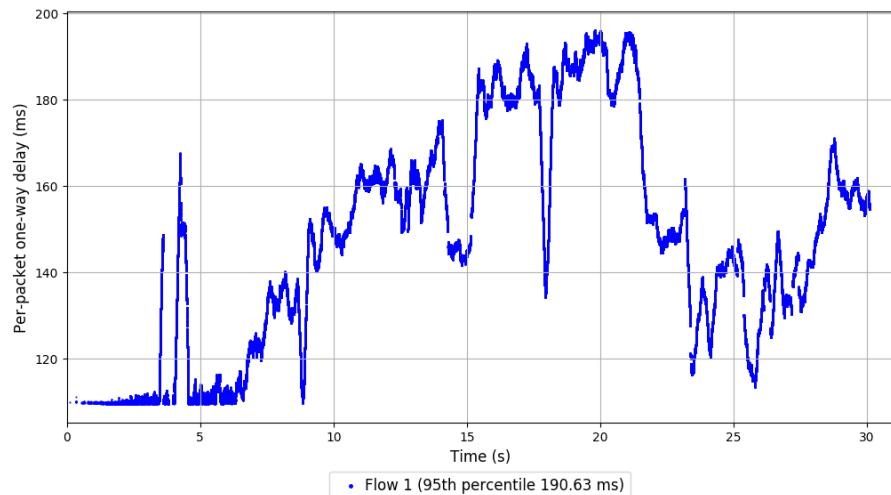
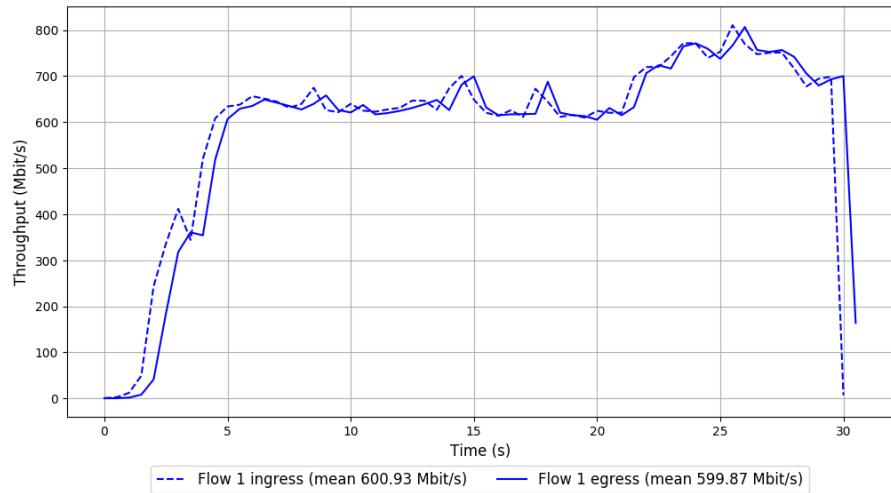


Run 3: Statistics of TCP Cubic

```
Start at: 2018-12-10 21:38:52
End at: 2018-12-10 21:39:22
Local clock offset: 24.833 ms
Remote clock offset: 27.308 ms

# Below is generated by plot.py at 2018-12-10 23:19:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 599.87 Mbit/s
95th percentile per-packet one-way delay: 190.634 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 599.87 Mbit/s
95th percentile per-packet one-way delay: 190.634 ms
Loss rate: 0.17%
```

Run 3: Report of TCP Cubic — Data Link

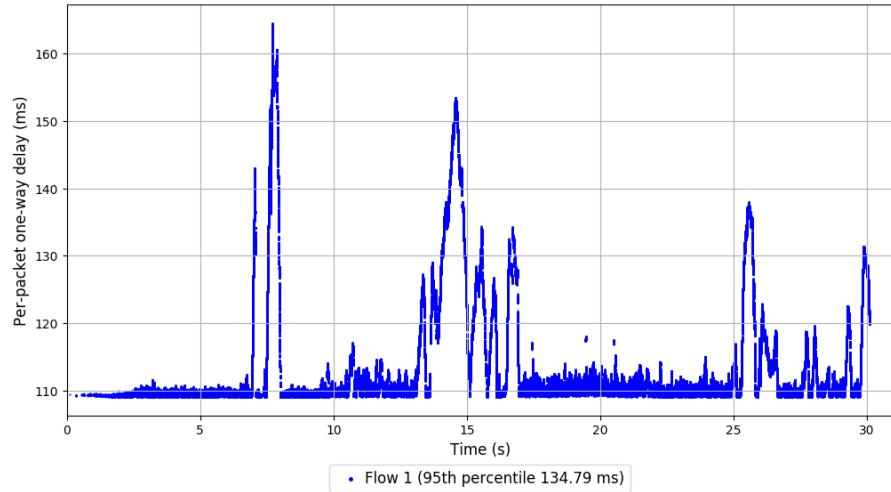
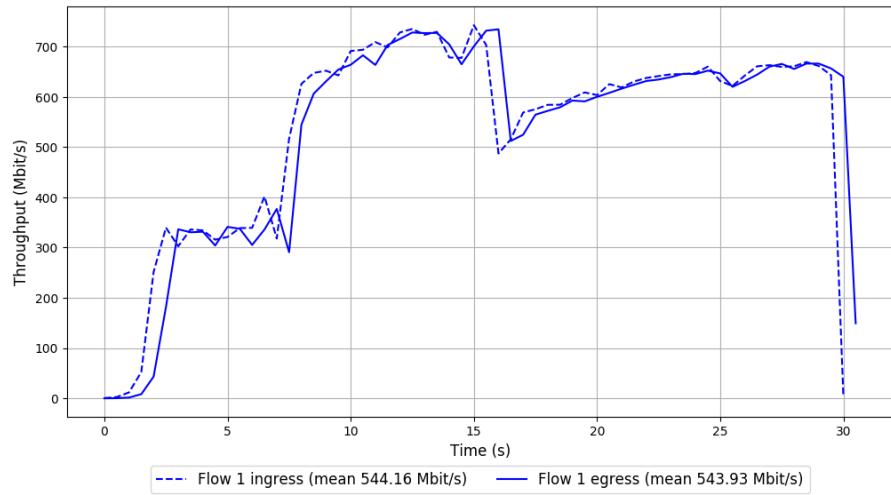


Run 4: Statistics of TCP Cubic

```
Start at: 2018-12-10 22:07:30
End at: 2018-12-10 22:08:00
Local clock offset: 9.333 ms
Remote clock offset: 10.219 ms

# Below is generated by plot.py at 2018-12-10 23:19:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 543.93 Mbit/s
95th percentile per-packet one-way delay: 134.786 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 543.93 Mbit/s
95th percentile per-packet one-way delay: 134.786 ms
Loss rate: 0.04%
```

Run 4: Report of TCP Cubic — Data Link

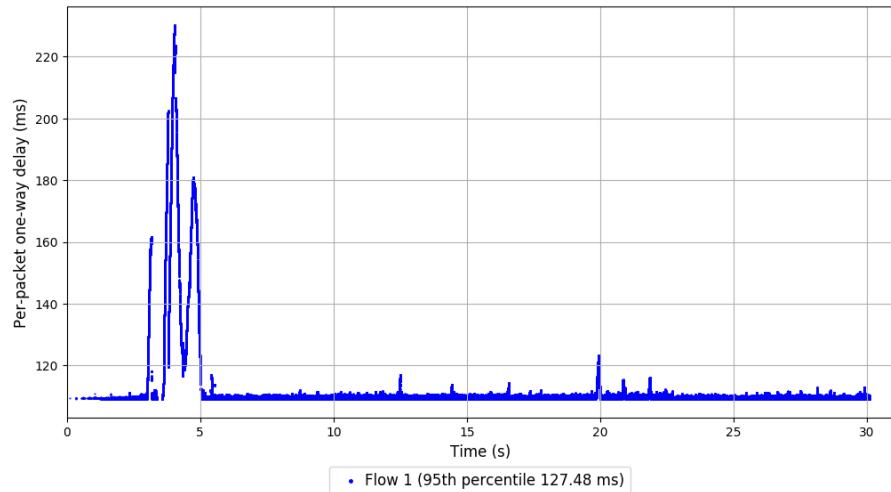
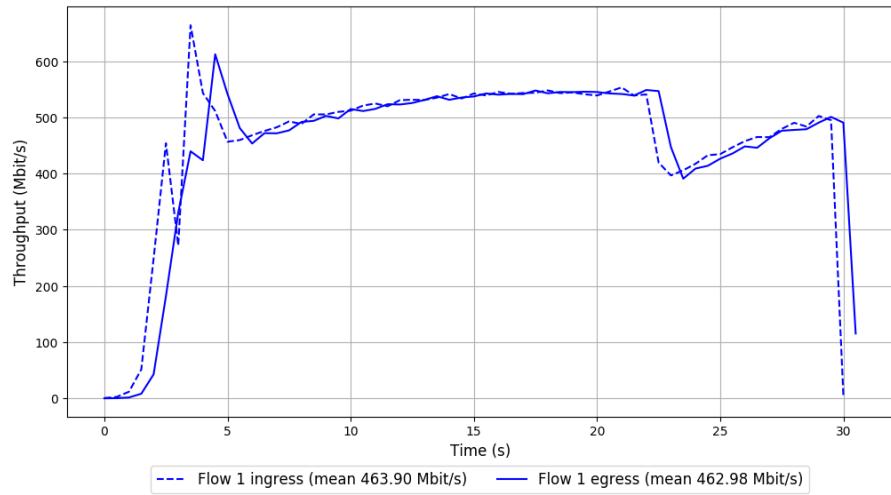


Run 5: Statistics of TCP Cubic

```
Start at: 2018-12-10 22:36:01
End at: 2018-12-10 22:36:31
Local clock offset: 3.56 ms
Remote clock offset: 3.883 ms

# Below is generated by plot.py at 2018-12-10 23:19:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 462.98 Mbit/s
95th percentile per-packet one-way delay: 127.481 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 462.98 Mbit/s
95th percentile per-packet one-way delay: 127.481 ms
Loss rate: 0.20%
```

Run 5: Report of TCP Cubic — Data Link

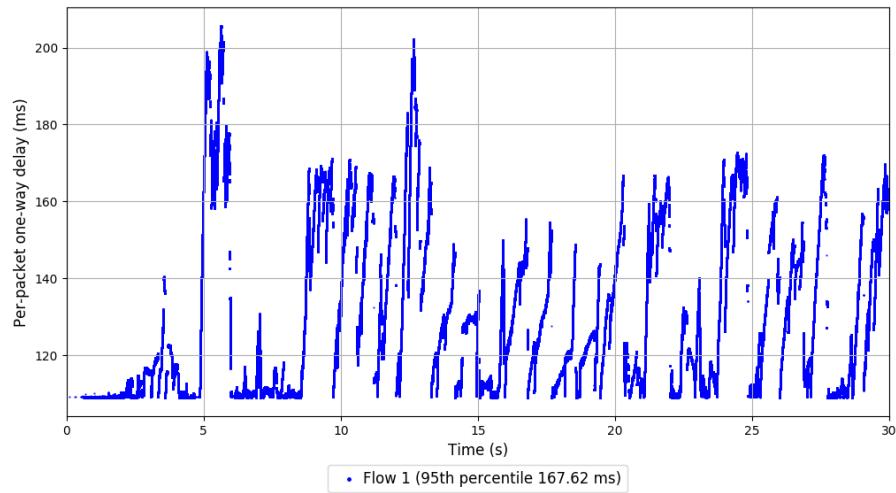
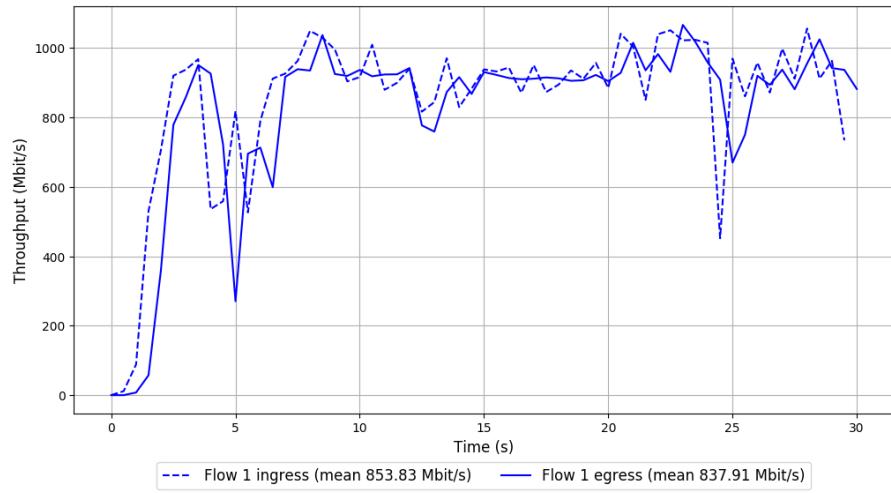


```
Run 1: Statistics of FillP

Start at: 2018-12-10 20:48:01
End at: 2018-12-10 20:48:31
Local clock offset: 12.515 ms
Remote clock offset: 13.574 ms

# Below is generated by plot.py at 2018-12-10 23:26:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 837.91 Mbit/s
95th percentile per-packet one-way delay: 167.622 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 837.91 Mbit/s
95th percentile per-packet one-way delay: 167.622 ms
Loss rate: 1.85%
```

Run 1: Report of FillP — Data Link

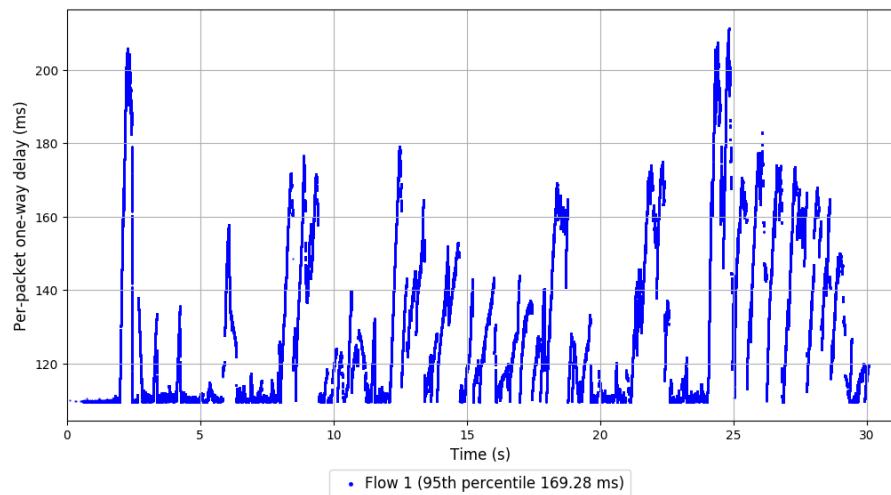
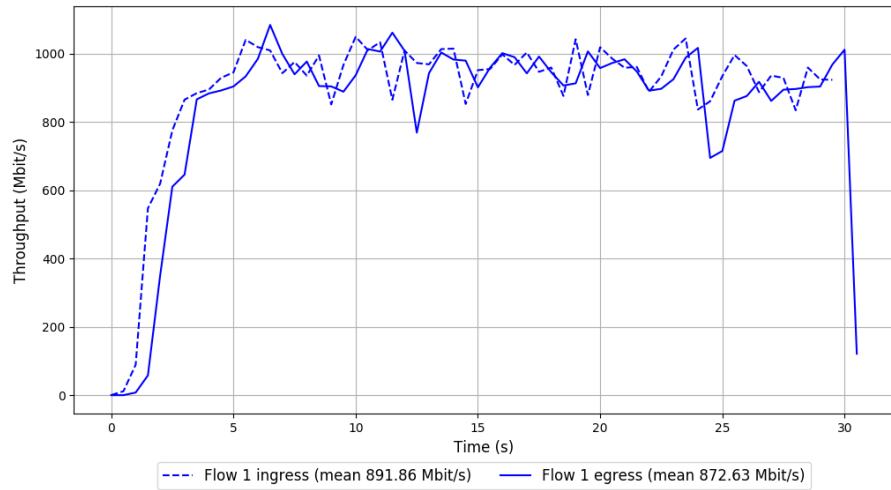


```
Run 2: Statistics of FillP
```

```
Start at: 2018-12-10 21:16:12
End at: 2018-12-10 21:16:42
Local clock offset: 20.202 ms
Remote clock offset: 22.954 ms

# Below is generated by plot.py at 2018-12-10 23:34:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 872.63 Mbit/s
95th percentile per-packet one-way delay: 169.278 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 872.63 Mbit/s
95th percentile per-packet one-way delay: 169.278 ms
Loss rate: 2.15%
```

Run 2: Report of FillP — Data Link

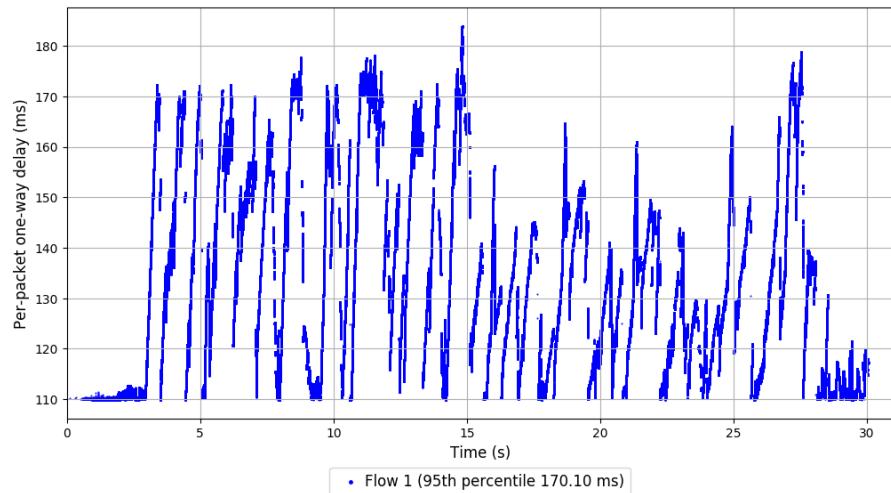
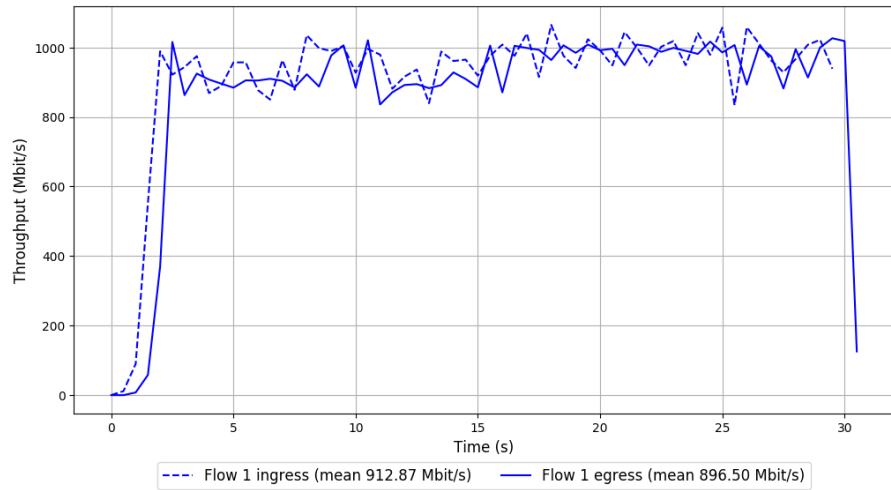


Run 3: Statistics of FillP

```
Start at: 2018-12-10 21:44:37
End at: 2018-12-10 21:45:07
Local clock offset: 13.744 ms
Remote clock offset: 15.886 ms

# Below is generated by plot.py at 2018-12-10 23:37:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 896.50 Mbit/s
95th percentile per-packet one-way delay: 170.103 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 896.50 Mbit/s
95th percentile per-packet one-way delay: 170.103 ms
Loss rate: 1.79%
```

Run 3: Report of FillP — Data Link

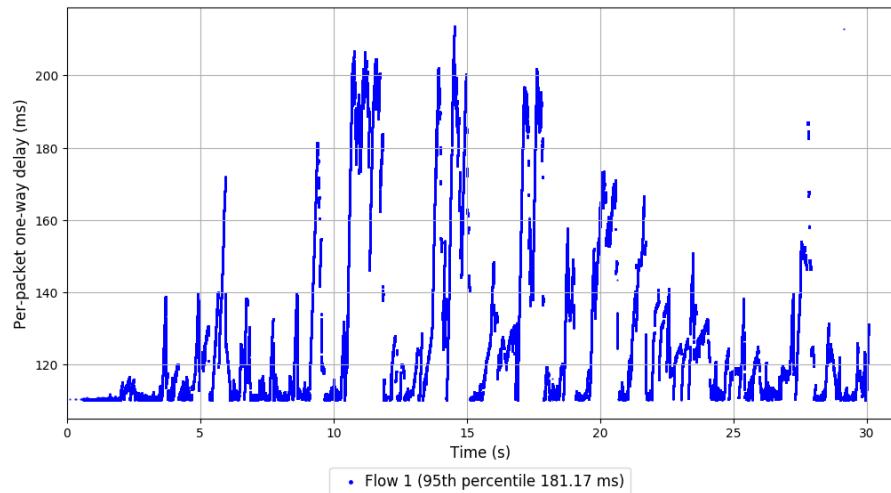
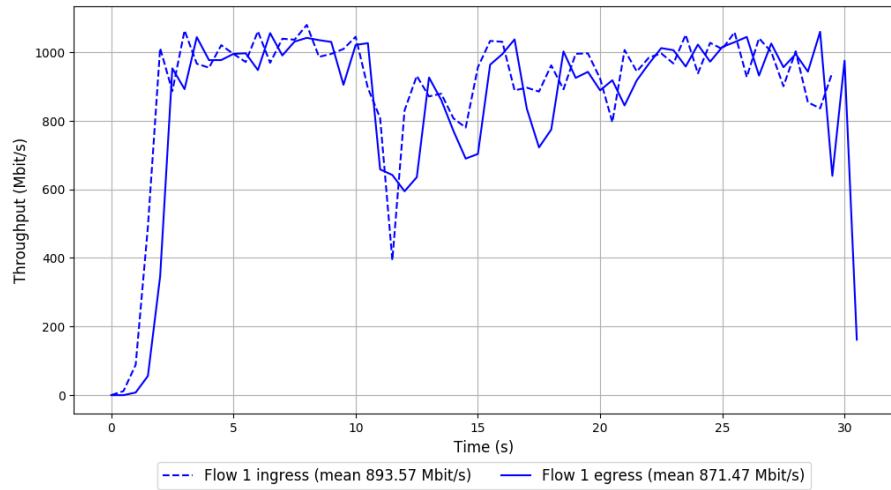


```
Run 4: Statistics of FillP
```

```
Start at: 2018-12-10 22:13:13
End at: 2018-12-10 22:13:43
Local clock offset: 6.485 ms
Remote clock offset: 6.954 ms

# Below is generated by plot.py at 2018-12-10 23:37:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 871.47 Mbit/s
95th percentile per-packet one-way delay: 181.168 ms
Loss rate: 2.47%
-- Flow 1:
Average throughput: 871.47 Mbit/s
95th percentile per-packet one-way delay: 181.168 ms
Loss rate: 2.47%
```

Run 4: Report of FillP — Data Link

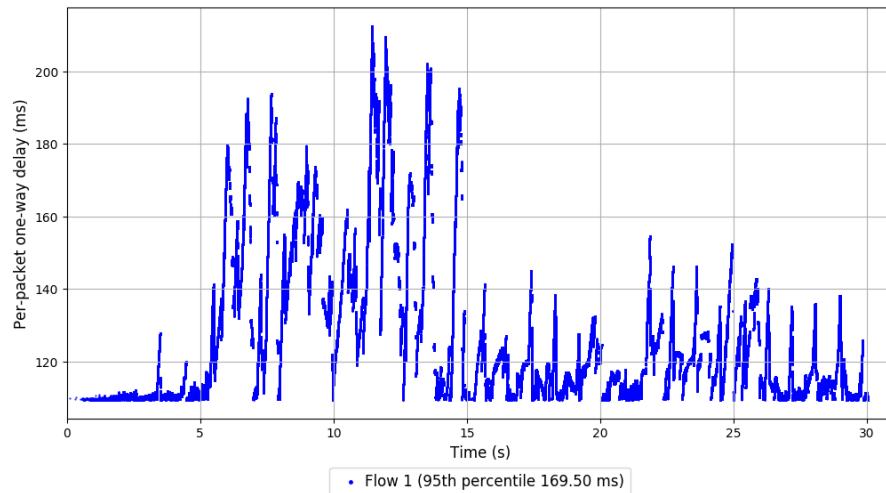
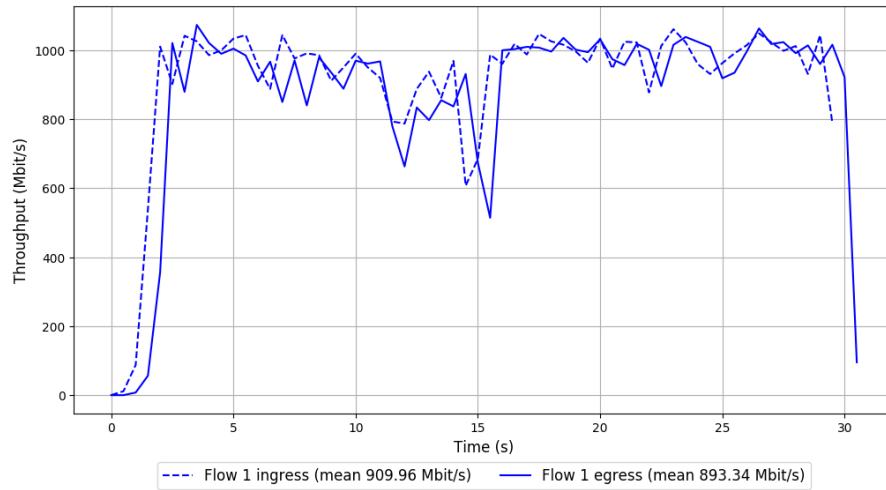


```
Run 5: Statistics of FillP
```

```
Start at: 2018-12-10 22:41:41
End at: 2018-12-10 22:42:11
Local clock offset: 4.017 ms
Remote clock offset: 4.513 ms

# Below is generated by plot.py at 2018-12-10 23:37:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 893.34 Mbit/s
95th percentile per-packet one-way delay: 169.501 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 893.34 Mbit/s
95th percentile per-packet one-way delay: 169.501 ms
Loss rate: 1.83%
```

Run 5: Report of FillP — Data Link

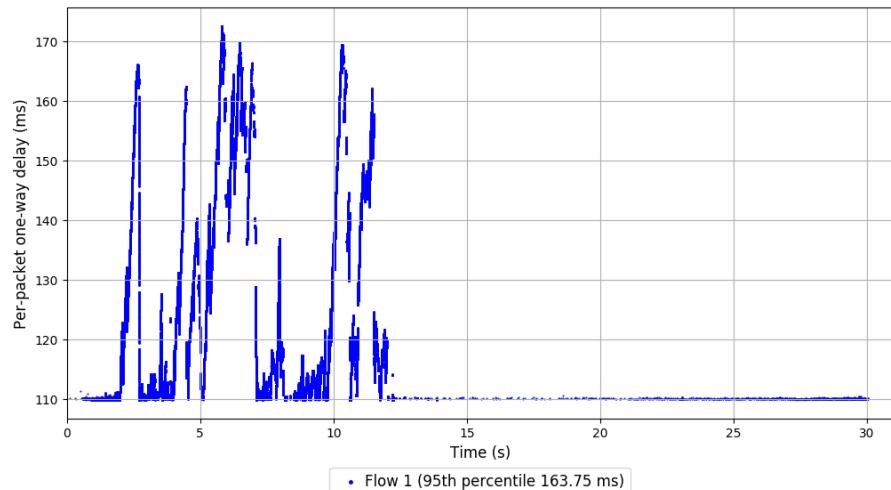
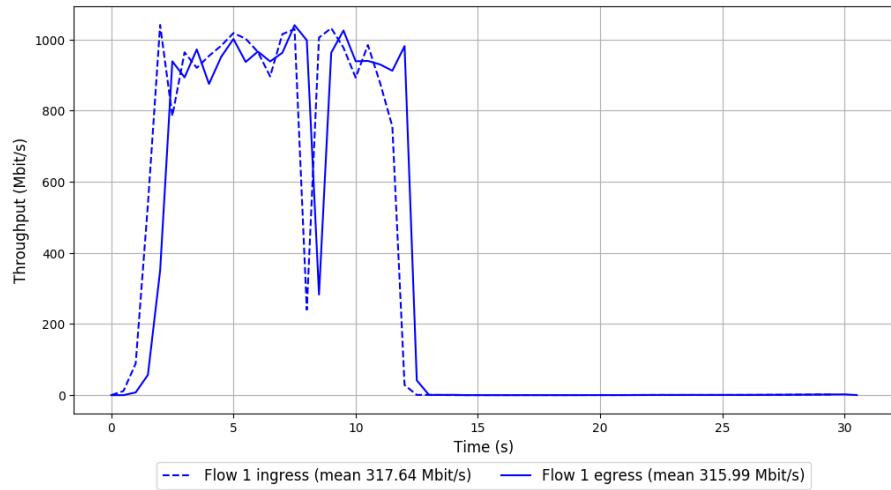


```
Run 1: Statistics of FillP-Sheep
```

```
Start at: 2018-12-10 20:32:05
End at: 2018-12-10 20:32:35
Local clock offset: 4.716 ms
Remote clock offset: 6.053 ms

# Below is generated by plot.py at 2018-12-10 23:37:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 315.99 Mbit/s
95th percentile per-packet one-way delay: 163.752 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 315.99 Mbit/s
95th percentile per-packet one-way delay: 163.752 ms
Loss rate: 0.52%
```

Run 1: Report of FillP-Sheep — Data Link

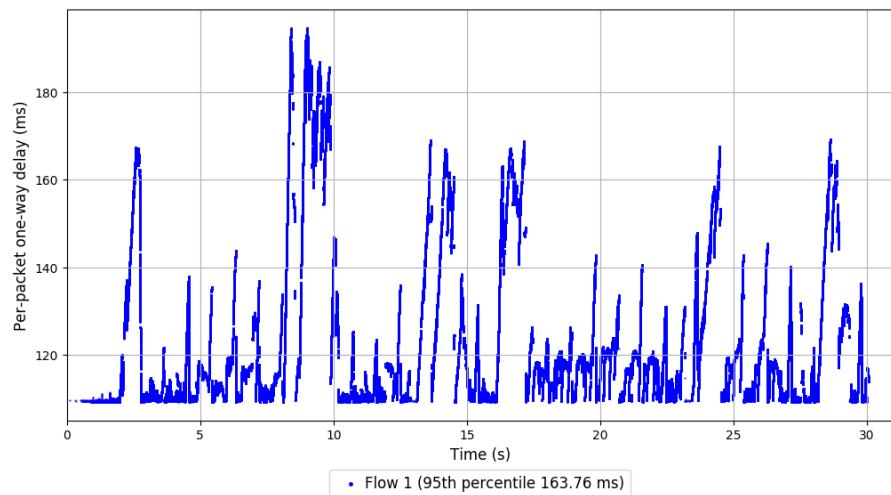
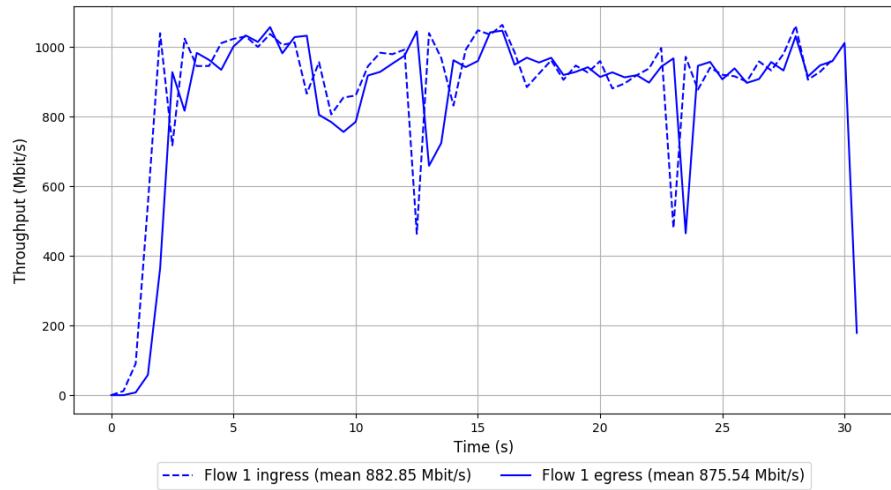


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-12-10 20:59:59
End at: 2018-12-10 21:00:29
Local clock offset: 23.754 ms
Remote clock offset: 26.543 ms

# Below is generated by plot.py at 2018-12-10 23:38:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 875.54 Mbit/s
95th percentile per-packet one-way delay: 163.764 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 875.54 Mbit/s
95th percentile per-packet one-way delay: 163.764 ms
Loss rate: 0.83%
```

Run 2: Report of FillP-Sheep — Data Link

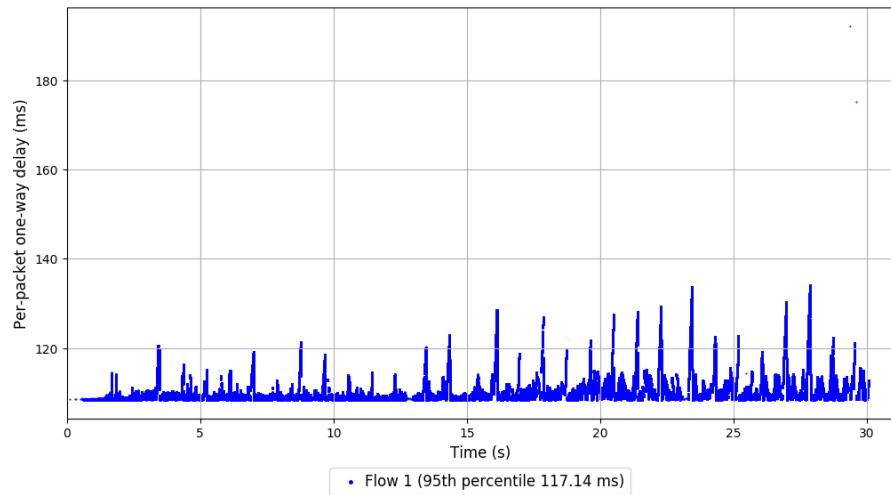
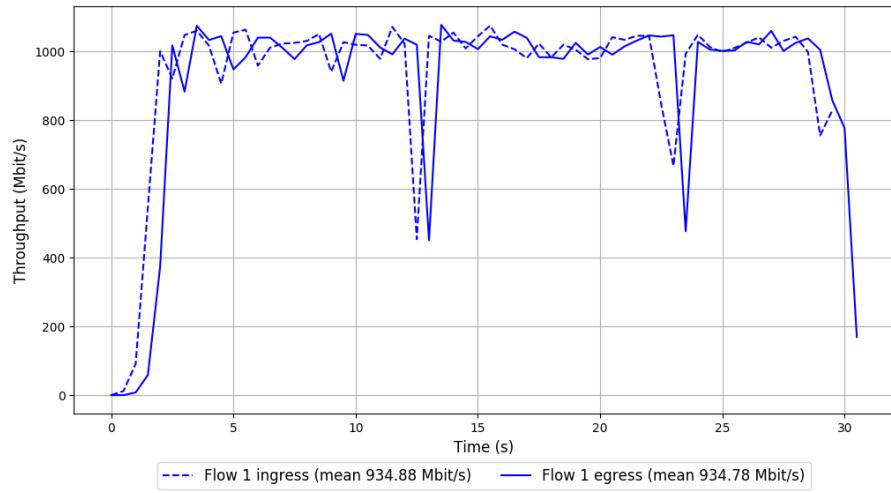


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-12-10 21:28:20
End at: 2018-12-10 21:28:50
Local clock offset: 31.353 ms
Remote clock offset: 34.059 ms

# Below is generated by plot.py at 2018-12-10 23:41:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 934.78 Mbit/s
95th percentile per-packet one-way delay: 117.139 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 934.78 Mbit/s
95th percentile per-packet one-way delay: 117.139 ms
Loss rate: 0.01%
```

Run 3: Report of FillP-Sheep — Data Link

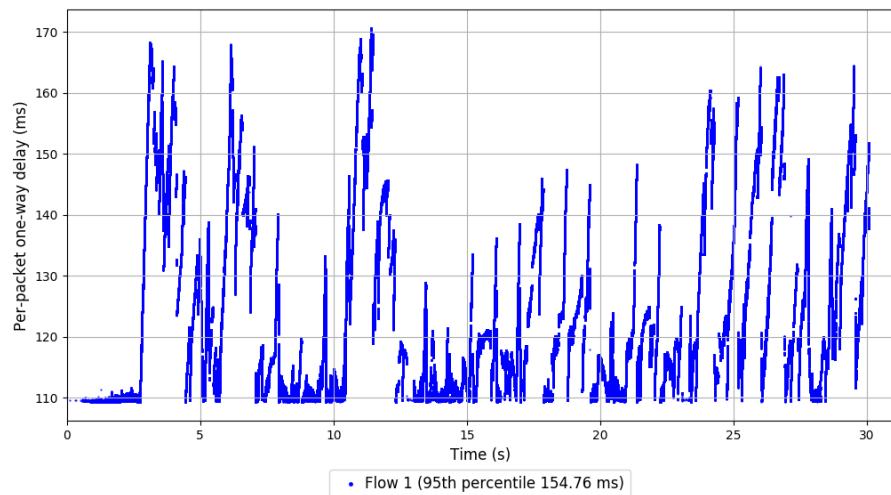
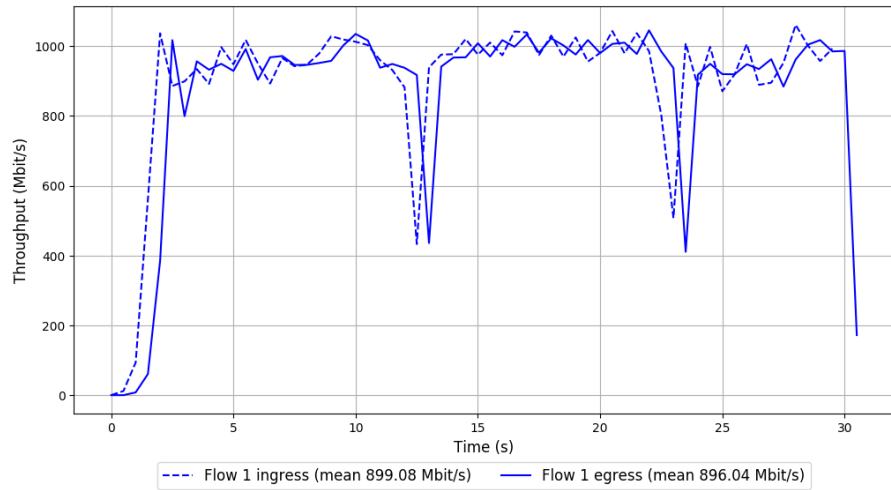


Run 4: Statistics of FillP-Sheep

```
Start at: 2018-12-10 21:56:47
End at: 2018-12-10 21:57:17
Local clock offset: 8.451 ms
Remote clock offset: 9.35 ms

# Below is generated by plot.py at 2018-12-10 23:46:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 896.04 Mbit/s
95th percentile per-packet one-way delay: 154.756 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 896.04 Mbit/s
95th percentile per-packet one-way delay: 154.756 ms
Loss rate: 0.33%
```

Run 4: Report of FillP-Sheep — Data Link

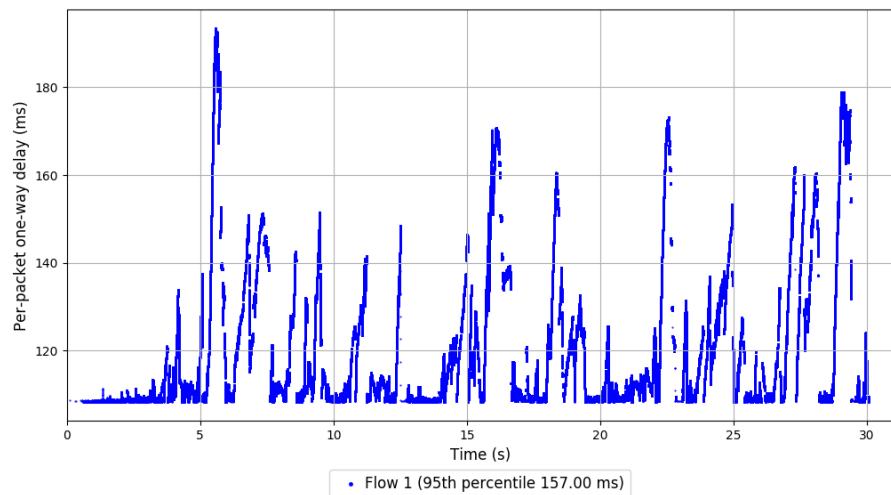
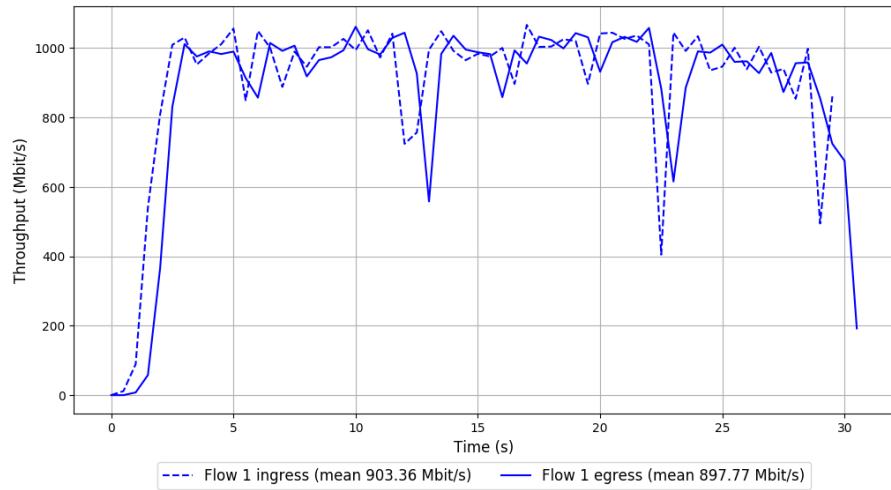


Run 5: Statistics of FillP-Sheep

```
Start at: 2018-12-10 22:25:18
End at: 2018-12-10 22:25:48
Local clock offset: 4.134 ms
Remote clock offset: 3.622 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 897.77 Mbit/s
95th percentile per-packet one-way delay: 157.004 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 897.77 Mbit/s
95th percentile per-packet one-way delay: 157.004 ms
Loss rate: 0.62%
```

Run 5: Report of FillP-Sheep — Data Link

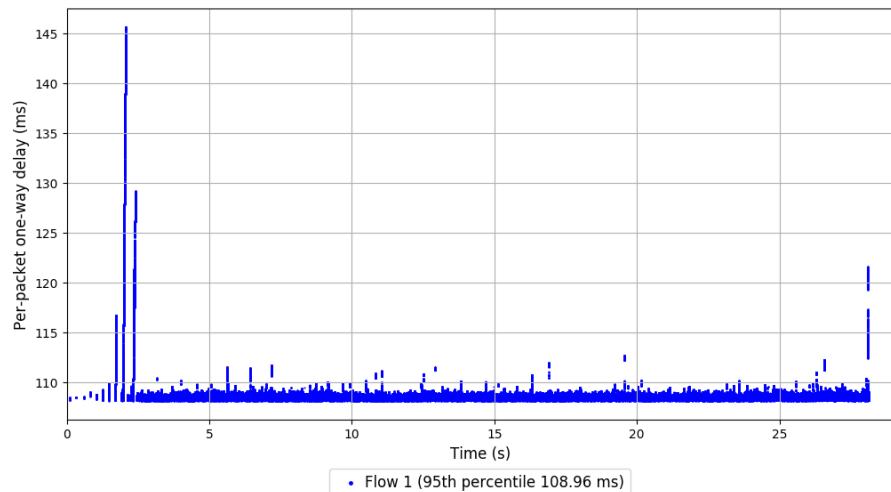
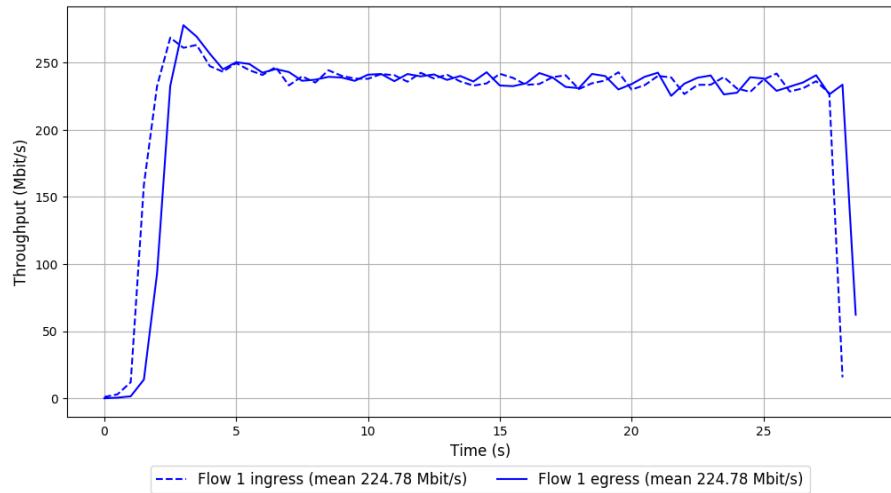


Run 1: Statistics of Indigo

```
Start at: 2018-12-10 20:46:29
End at: 2018-12-10 20:46:59
Local clock offset: 13.281 ms
Remote clock offset: 14.414 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.78 Mbit/s
95th percentile per-packet one-way delay: 108.958 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 224.78 Mbit/s
95th percentile per-packet one-way delay: 108.958 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link

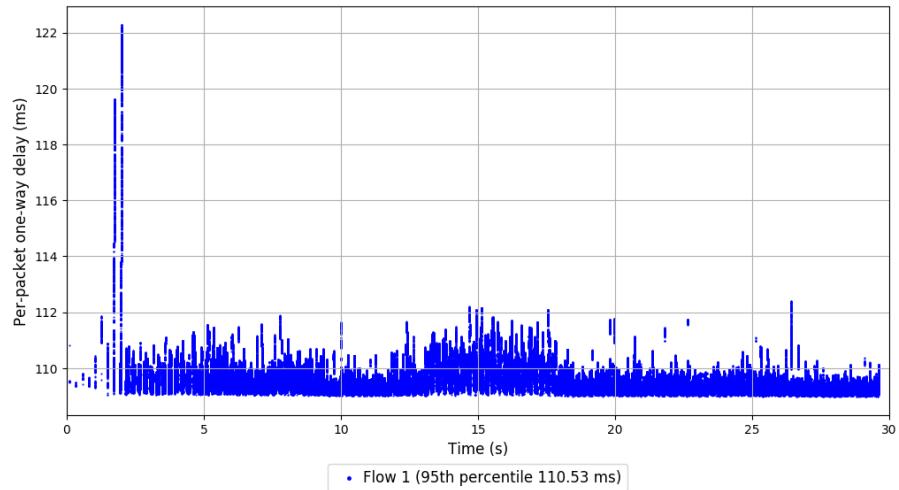
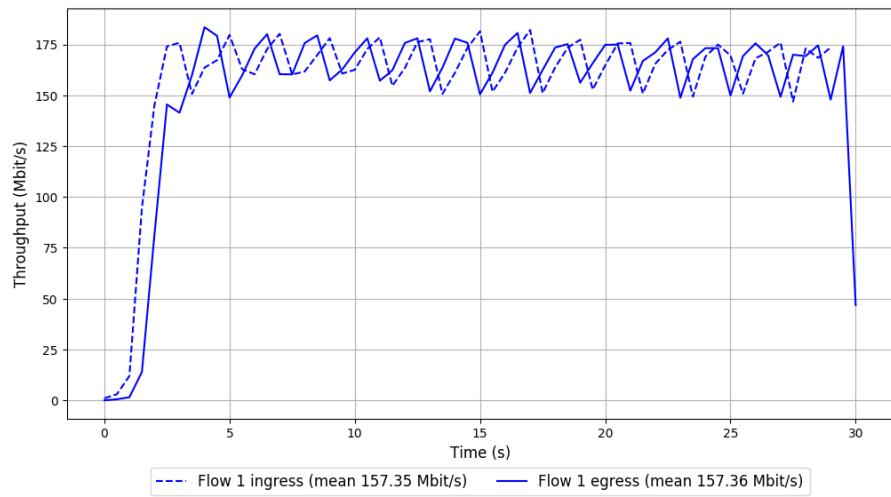


Run 2: Statistics of Indigo

```
Start at: 2018-12-10 21:14:46
End at: 2018-12-10 21:15:16
Local clock offset: 20.061 ms
Remote clock offset: 22.059 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 157.36 Mbit/s
95th percentile per-packet one-way delay: 110.527 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 157.36 Mbit/s
95th percentile per-packet one-way delay: 110.527 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo — Data Link

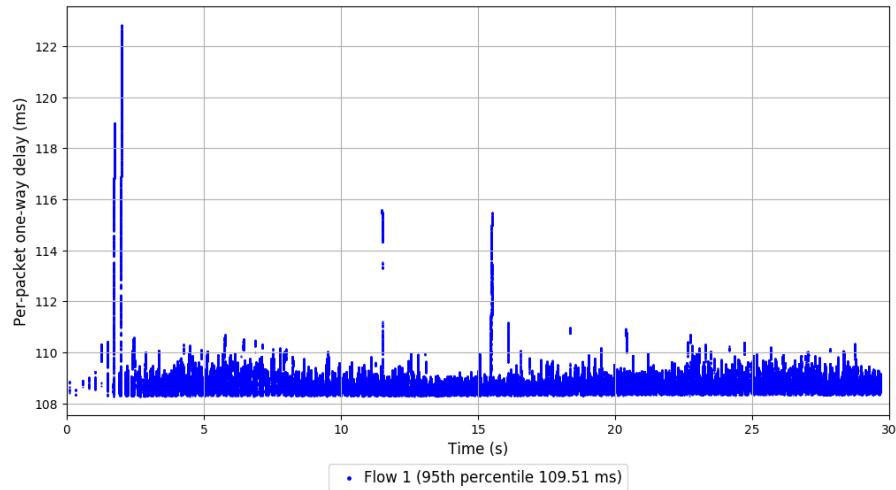
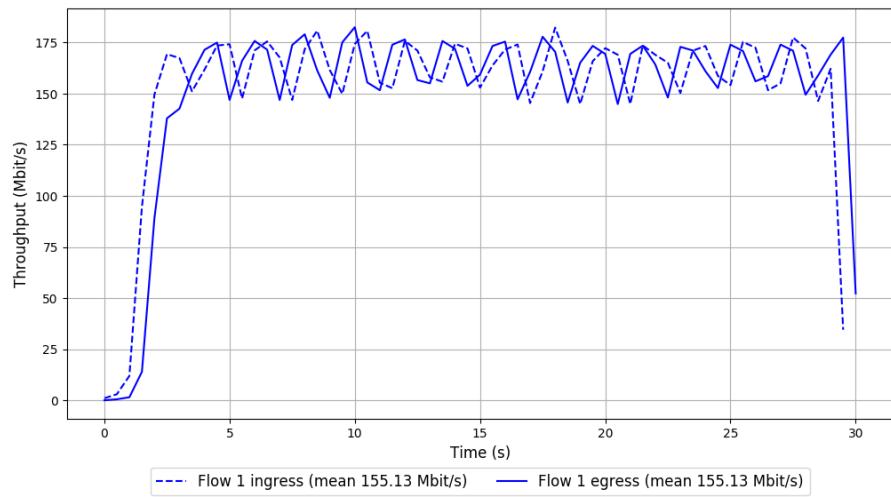


Run 3: Statistics of Indigo

```
Start at: 2018-12-10 21:43:12
End at: 2018-12-10 21:43:42
Local clock offset: 16.701 ms
Remote clock offset: 18.096 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 155.13 Mbit/s
95th percentile per-packet one-way delay: 109.506 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 155.13 Mbit/s
95th percentile per-packet one-way delay: 109.506 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

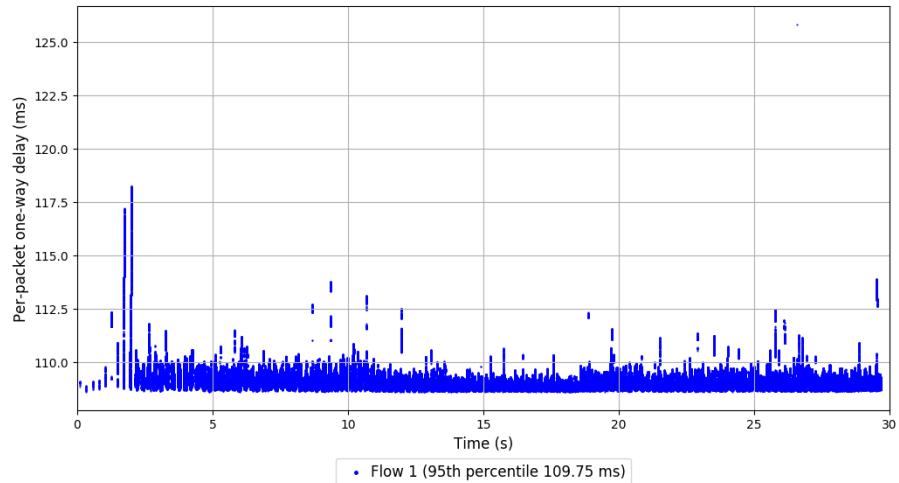
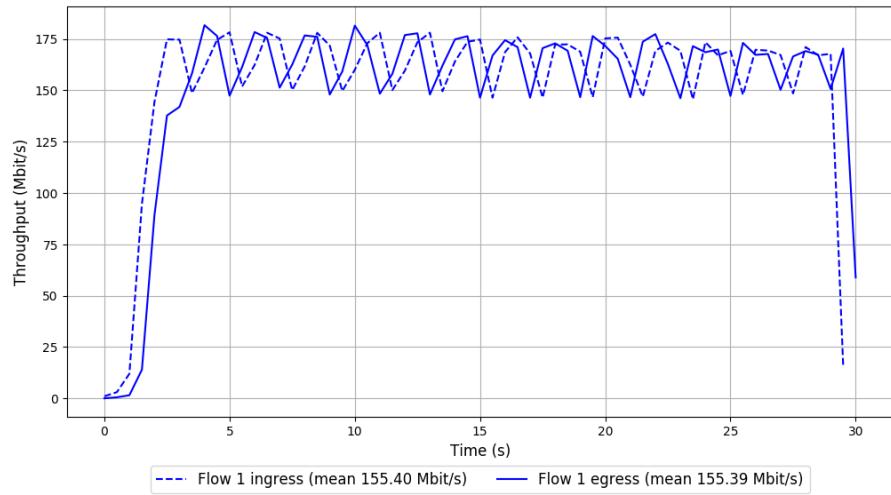


Run 4: Statistics of Indigo

```
Start at: 2018-12-10 22:11:47
End at: 2018-12-10 22:12:17
Local clock offset: 7.598 ms
Remote clock offset: 7.834 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 155.39 Mbit/s
95th percentile per-packet one-way delay: 109.751 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 155.39 Mbit/s
95th percentile per-packet one-way delay: 109.751 ms
Loss rate: 0.01%
```

Run 4: Report of Indigo — Data Link

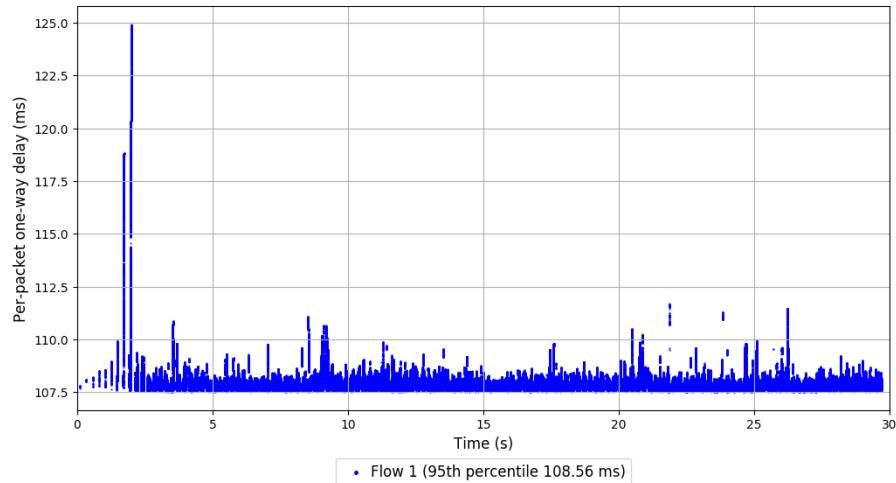
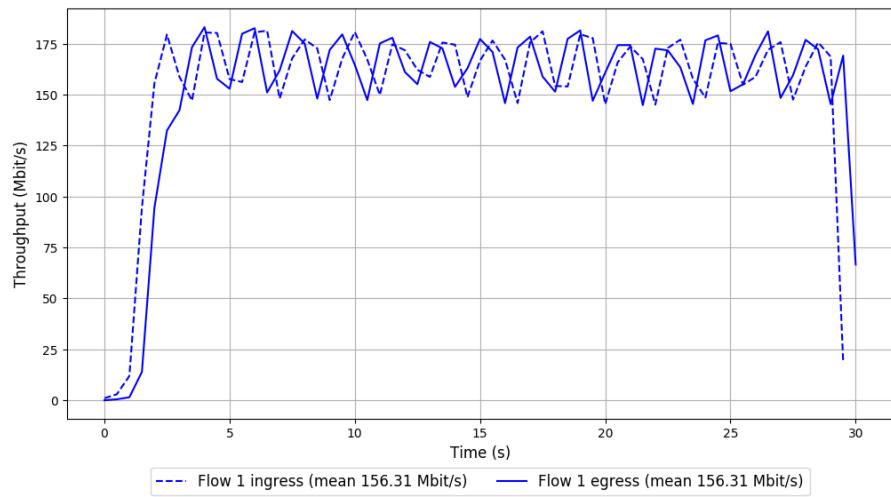


Run 5: Statistics of Indigo

```
Start at: 2018-12-10 22:40:15
End at: 2018-12-10 22:40:45
Local clock offset: 4.749 ms
Remote clock offset: 4.295 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 156.31 Mbit/s
95th percentile per-packet one-way delay: 108.555 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 156.31 Mbit/s
95th percentile per-packet one-way delay: 108.555 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo — Data Link

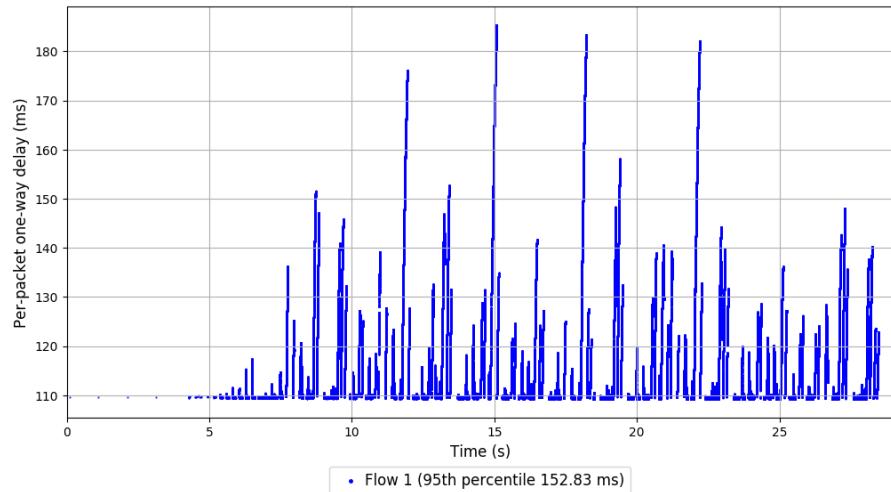
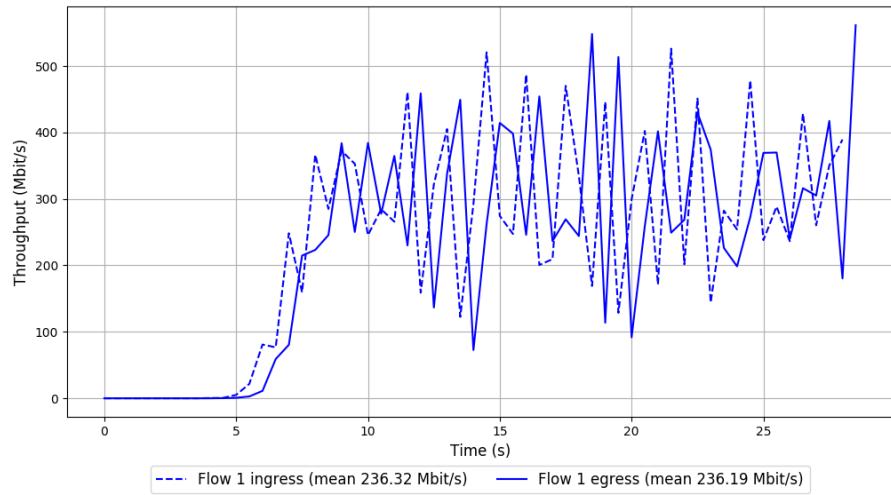


```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-12-10 20:29:32
End at: 2018-12-10 20:30:02
Local clock offset: 3.096 ms
Remote clock offset: 4.101 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 236.19 Mbit/s
95th percentile per-packet one-way delay: 152.827 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 236.19 Mbit/s
95th percentile per-packet one-way delay: 152.827 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo-96d2da3 — Data Link

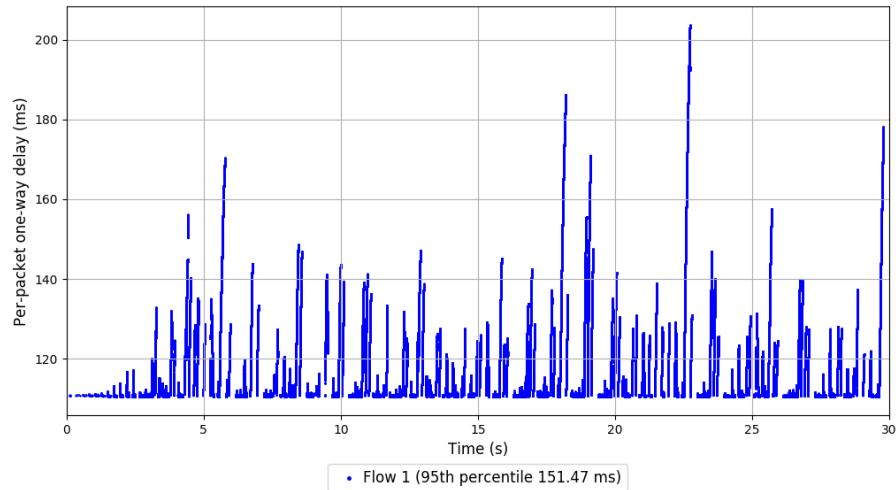
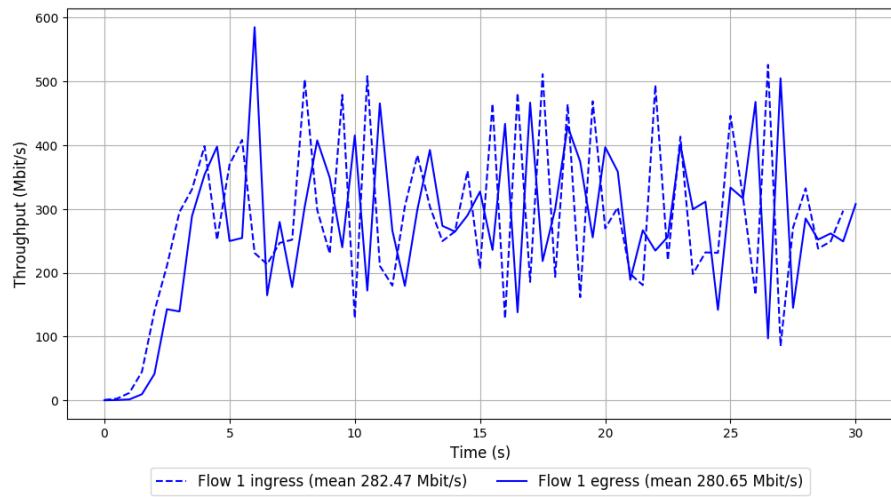


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-12-10 20:57:23
End at: 2018-12-10 20:57:53
Local clock offset: 19.345 ms
Remote clock offset: 22.68 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 280.65 Mbit/s
95th percentile per-packet one-way delay: 151.469 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 280.65 Mbit/s
95th percentile per-packet one-way delay: 151.469 ms
Loss rate: 0.51%
```

Run 2: Report of Indigo-96d2da3 — Data Link

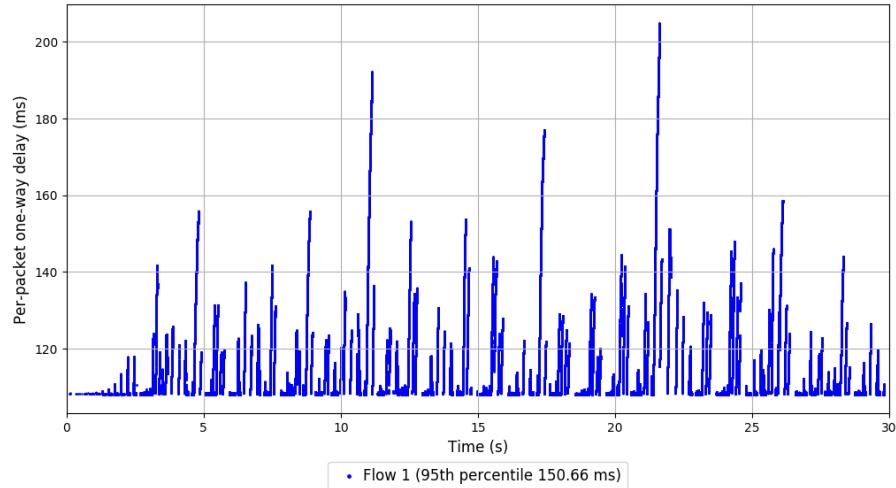
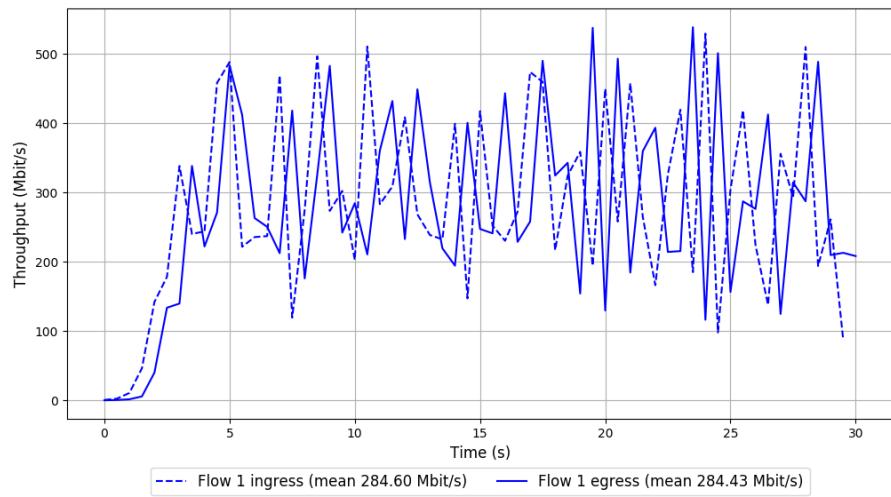


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-12-10 21:25:43
End at: 2018-12-10 21:26:13
Local clock offset: 29.53 ms
Remote clock offset: 31.431 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 284.43 Mbit/s
95th percentile per-packet one-way delay: 150.663 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 284.43 Mbit/s
95th percentile per-packet one-way delay: 150.663 ms
Loss rate: 0.06%
```

Run 3: Report of Indigo-96d2da3 — Data Link

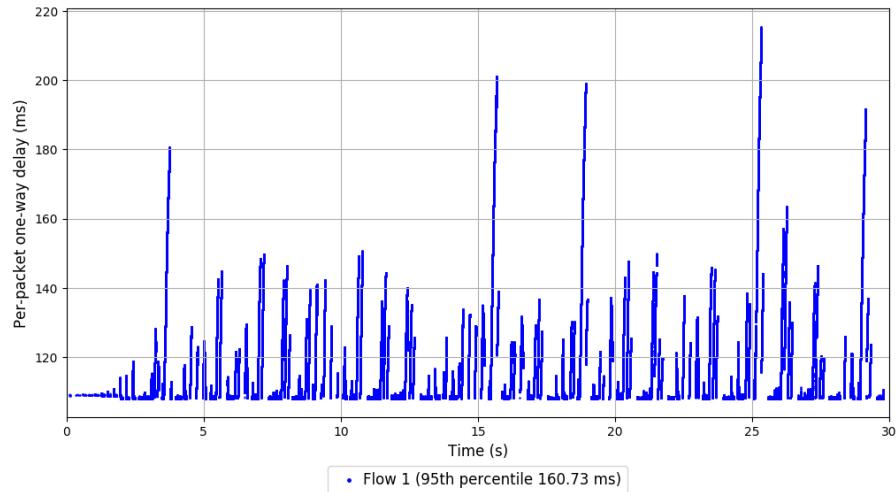
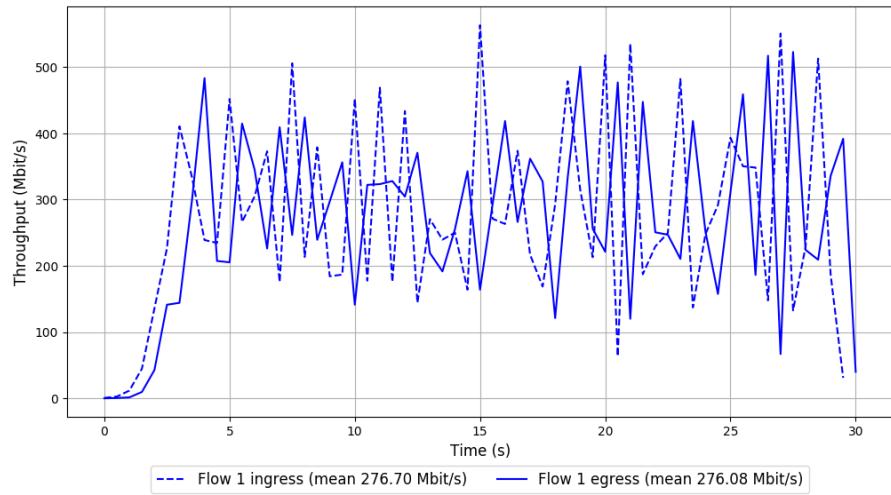


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-12-10 21:54:11
End at: 2018-12-10 21:54:41
Local clock offset: 9.223 ms
Remote clock offset: 9.721 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 276.08 Mbit/s
95th percentile per-packet one-way delay: 160.726 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 276.08 Mbit/s
95th percentile per-packet one-way delay: 160.726 ms
Loss rate: 0.23%
```

Run 4: Report of Indigo-96d2da3 — Data Link

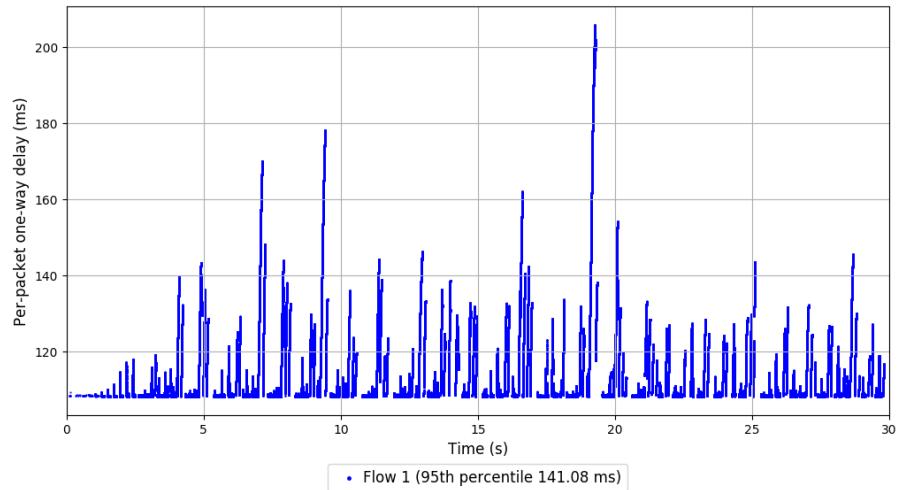
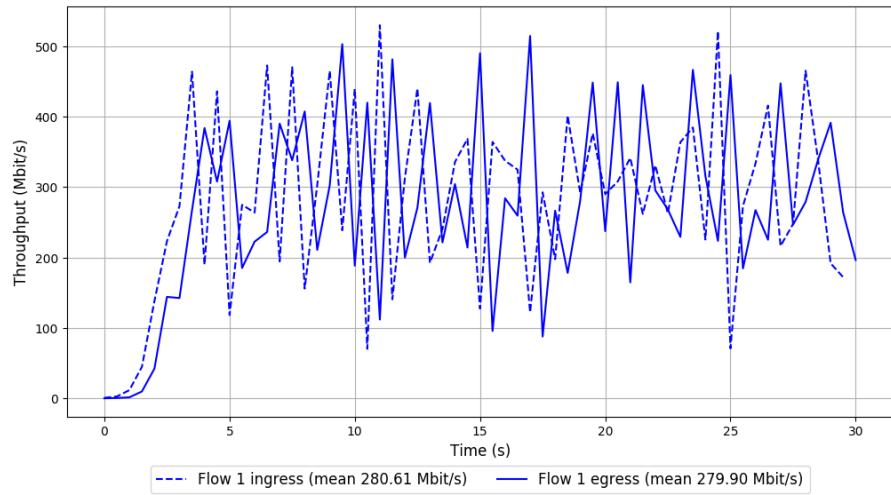


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-12-10 22:22:41
End at: 2018-12-10 22:23:11
Local clock offset: 3.656 ms
Remote clock offset: 3.848 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 279.90 Mbit/s
95th percentile per-packet one-way delay: 141.082 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 279.90 Mbit/s
95th percentile per-packet one-way delay: 141.082 ms
Loss rate: 0.25%
```

Run 5: Report of Indigo-96d2da3 — Data Link

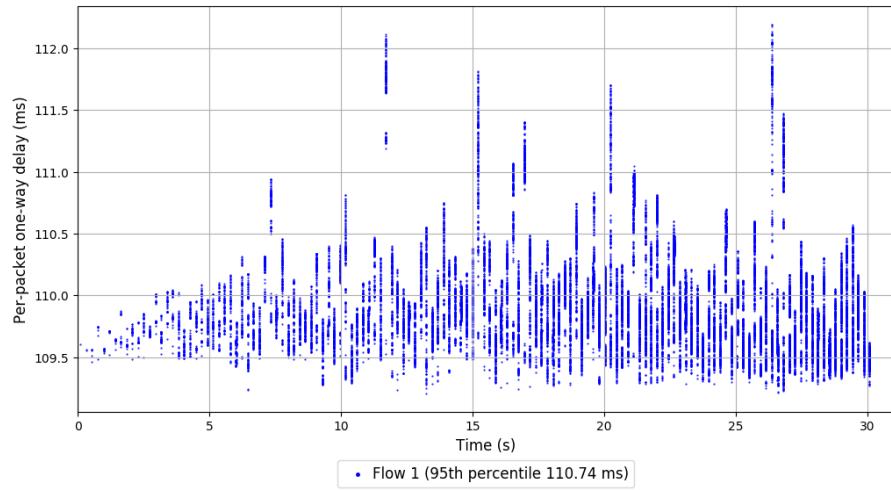
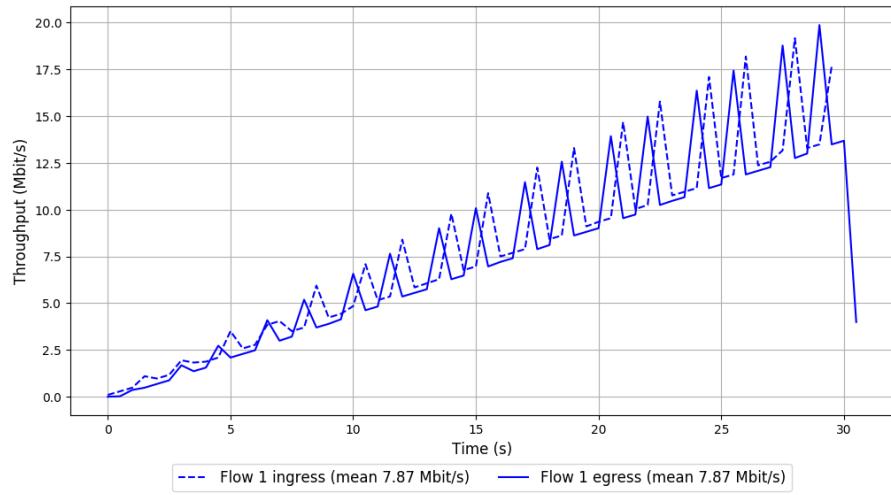


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-12-10 20:30:54
End at: 2018-12-10 20:31:24
Local clock offset: 6.116 ms
Remote clock offset: 7.733 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 110.740 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 110.740 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

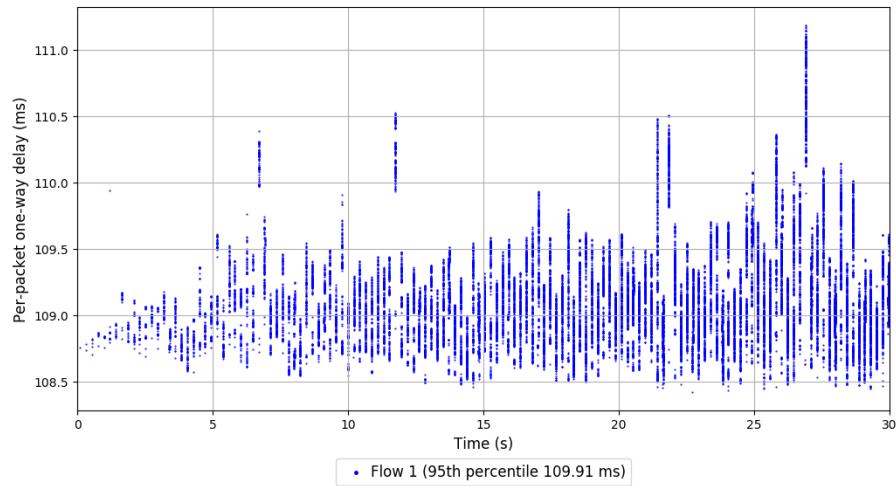
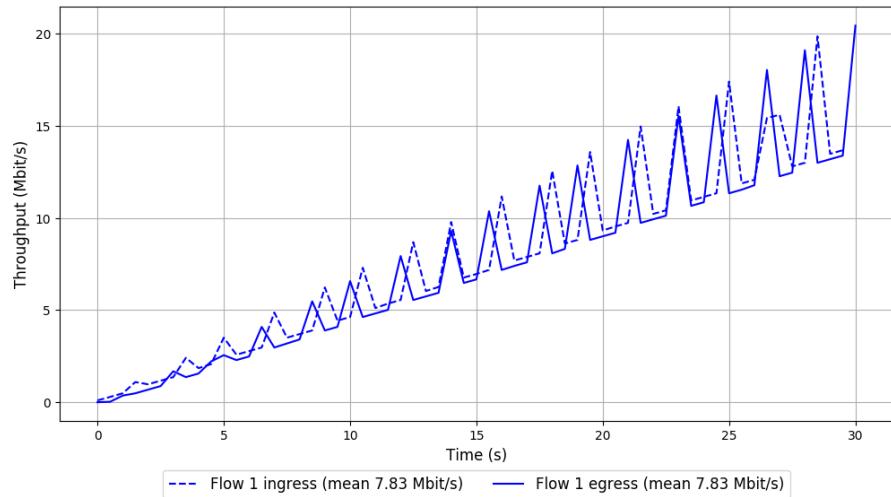


Run 2: Statistics of LEDBAT

```
Start at: 2018-12-10 20:58:48
End at: 2018-12-10 20:59:18
Local clock offset: 22.892 ms
Remote clock offset: 24.75 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 109.913 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 109.913 ms
Loss rate: 0.00%
```

Run 2: Report of LEDBAT — Data Link

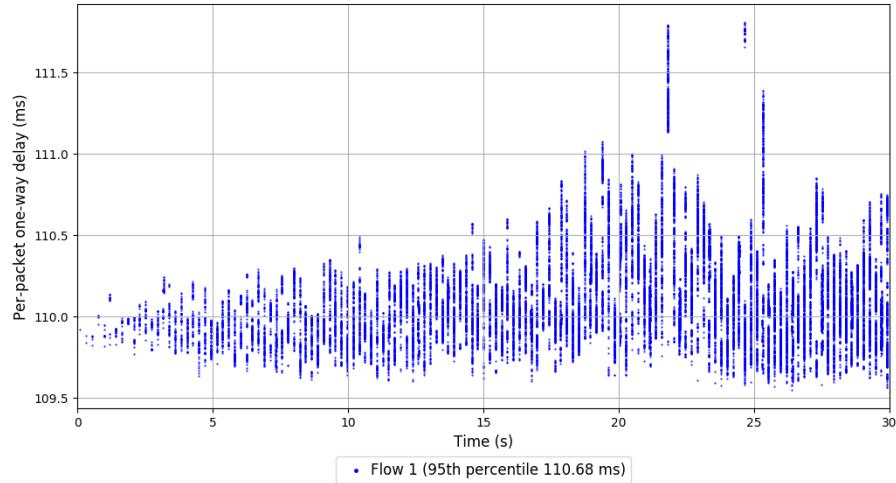
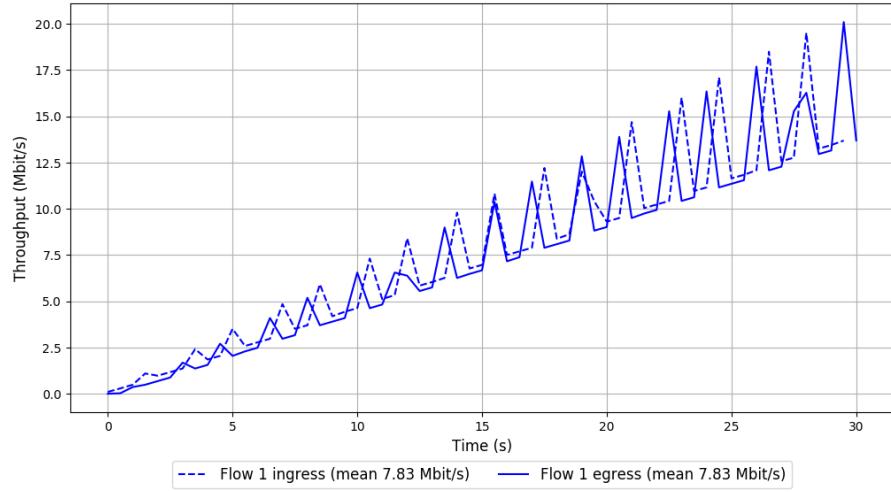


Run 3: Statistics of LEDBAT

```
Start at: 2018-12-10 21:27:09
End at: 2018-12-10 21:27:39
Local clock offset: 29.084 ms
Remote clock offset: 32.985 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 110.681 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 110.681 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

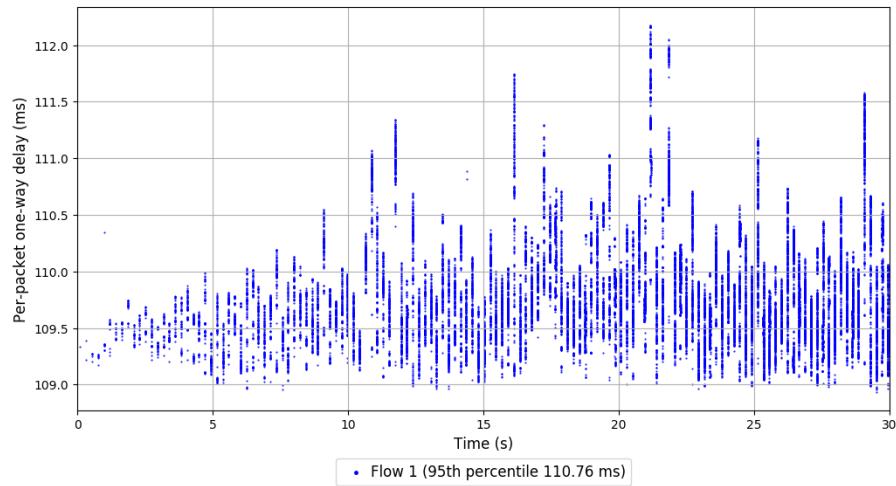
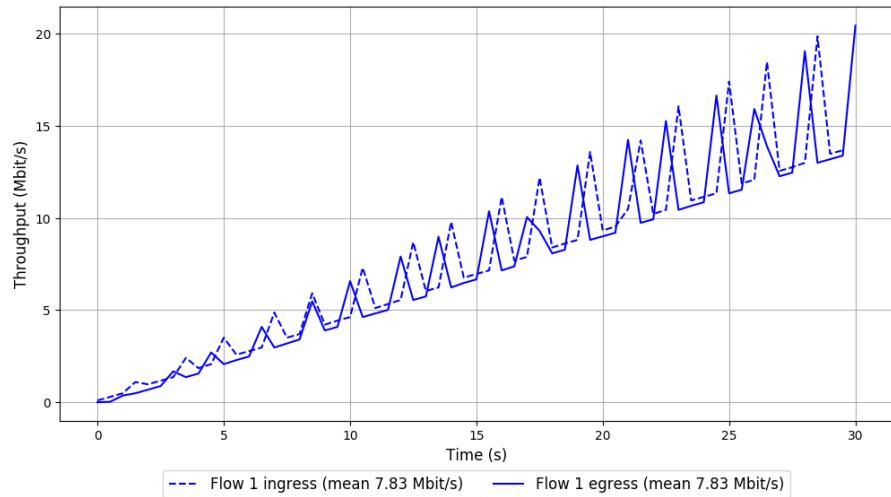


Run 4: Statistics of LEDBAT

```
Start at: 2018-12-10 21:55:36
End at: 2018-12-10 21:56:06
Local clock offset: 8.709 ms
Remote clock offset: 9.5 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 110.764 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 110.764 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

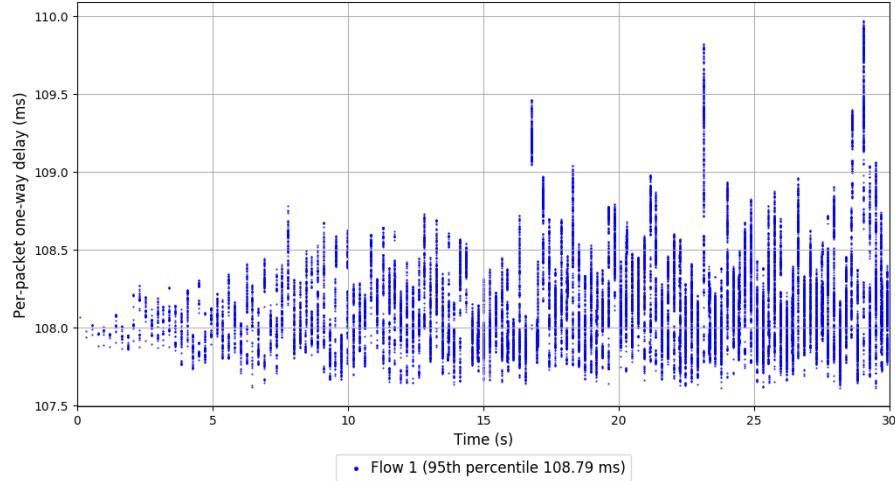
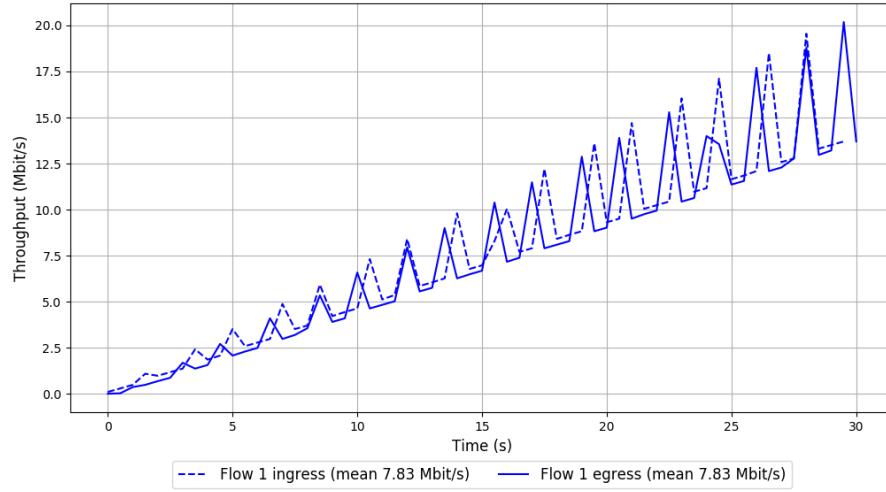


Run 5: Statistics of LEDBAT

```
Start at: 2018-12-10 22:24:07
End at: 2018-12-10 22:24:37
Local clock offset: 4.709 ms
Remote clock offset: 3.658 ms

# Below is generated by plot.py at 2018-12-10 23:49:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 108.792 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 108.792 ms
Loss rate: 0.00%
```

Run 5: Report of LEDBAT — Data Link

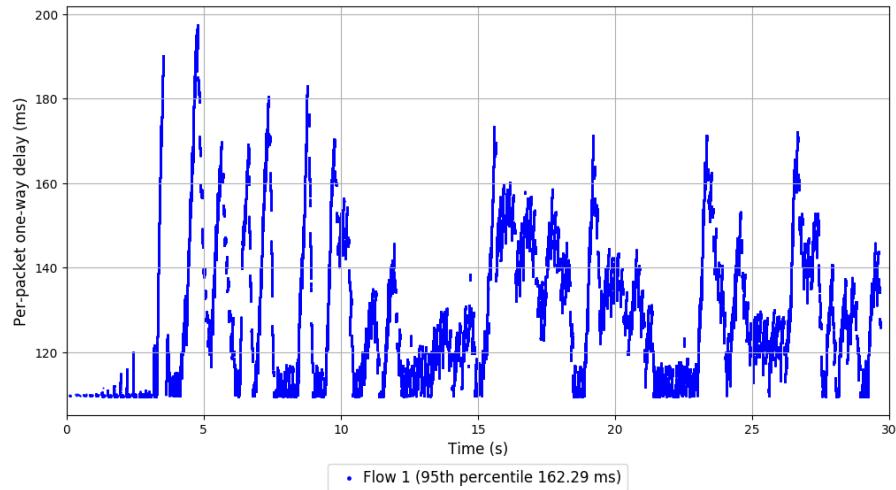
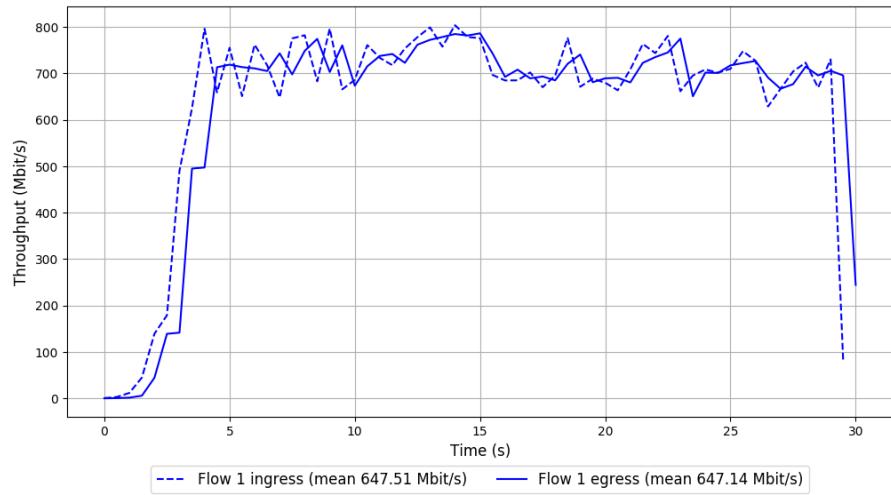


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-12-10 20:51:29
End at: 2018-12-10 20:51:59
Local clock offset: 13.896 ms
Remote clock offset: 15.468 ms

# Below is generated by plot.py at 2018-12-10 23:57:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 647.14 Mbit/s
95th percentile per-packet one-way delay: 162.293 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 647.14 Mbit/s
95th percentile per-packet one-way delay: 162.293 ms
Loss rate: 0.06%
```

Run 1: Report of Indigo-Muses — Data Link

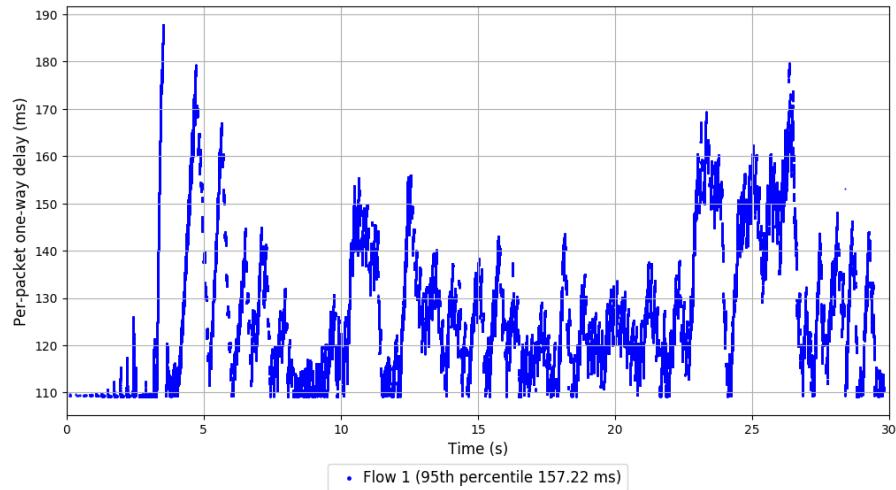
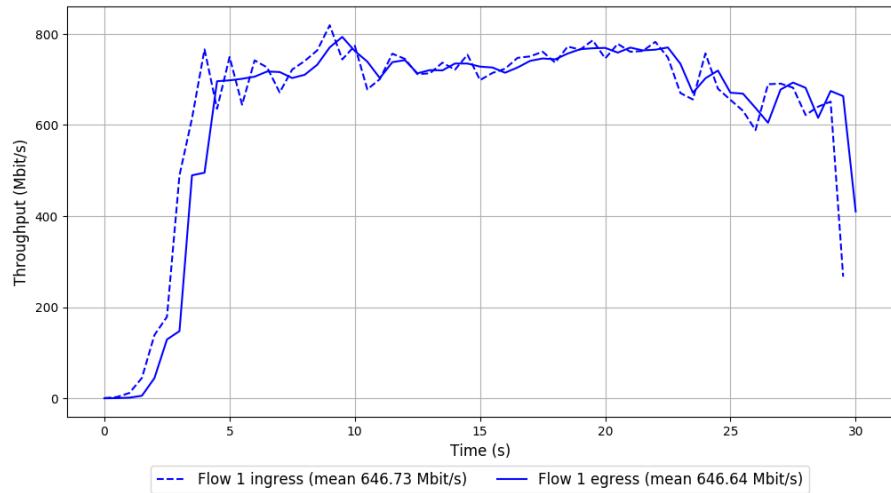


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-12-10 21:19:40
End at: 2018-12-10 21:20:10
Local clock offset: 23.248 ms
Remote clock offset: 25.73 ms

# Below is generated by plot.py at 2018-12-10 23:57:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 646.64 Mbit/s
95th percentile per-packet one-way delay: 157.221 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 646.64 Mbit/s
95th percentile per-packet one-way delay: 157.221 ms
Loss rate: 0.01%
```

Run 2: Report of Indigo-Muses — Data Link

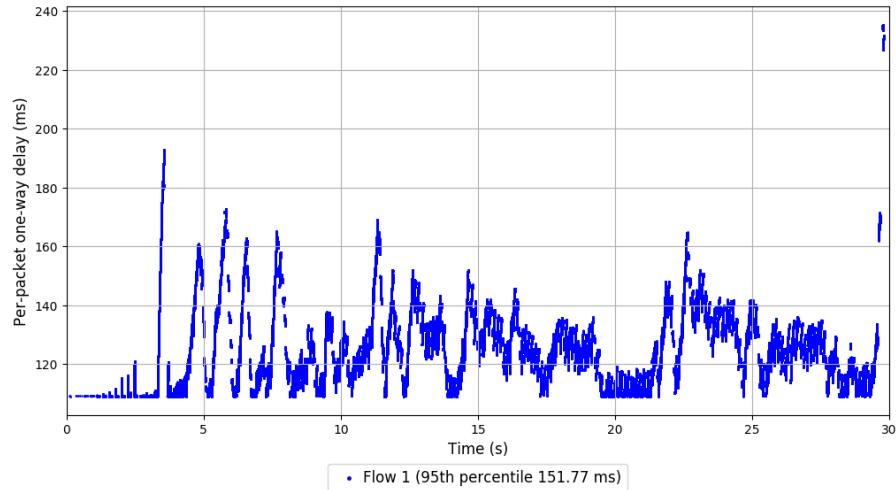
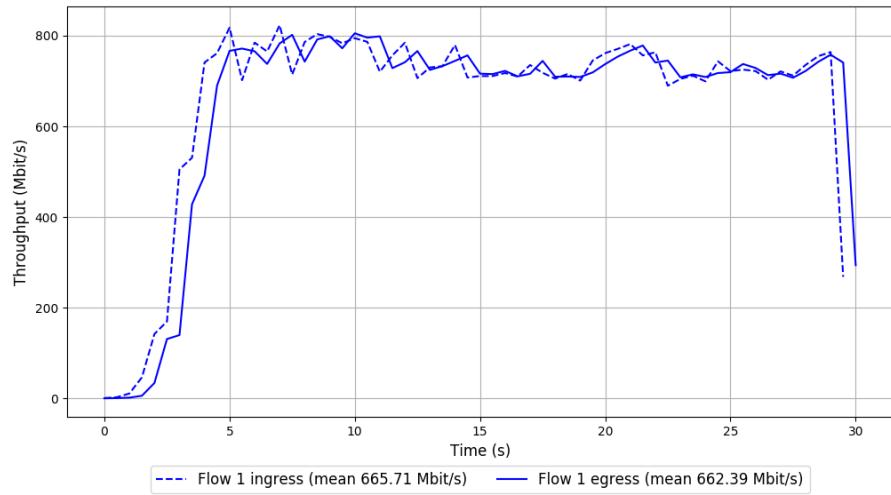


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-12-10 21:48:07
End at: 2018-12-10 21:48:37
Local clock offset: 11.533 ms
Remote clock offset: 12.409 ms

# Below is generated by plot.py at 2018-12-10 23:58:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 662.39 Mbit/s
95th percentile per-packet one-way delay: 151.770 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 662.39 Mbit/s
95th percentile per-packet one-way delay: 151.770 ms
Loss rate: 0.49%
```

Run 3: Report of Indigo-Muses — Data Link

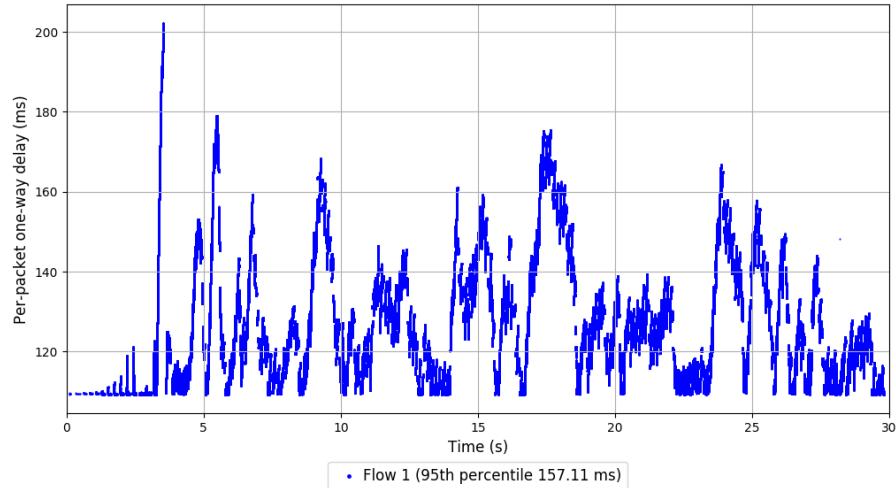
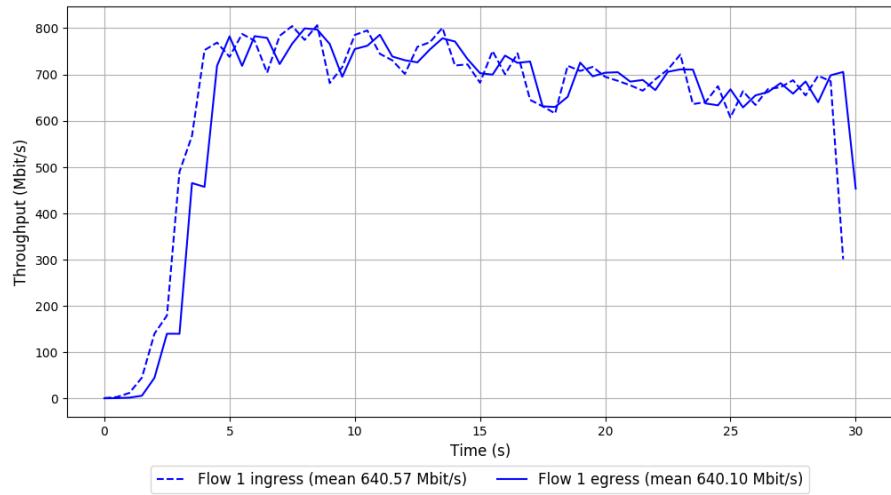


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-12-10 22:16:42
End at: 2018-12-10 22:17:12
Local clock offset: 4.986 ms
Remote clock offset: 5.25 ms

# Below is generated by plot.py at 2018-12-11 00:00:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 640.10 Mbit/s
95th percentile per-packet one-way delay: 157.107 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 640.10 Mbit/s
95th percentile per-packet one-way delay: 157.107 ms
Loss rate: 0.07%
```

Run 4: Report of Indigo-Muses — Data Link

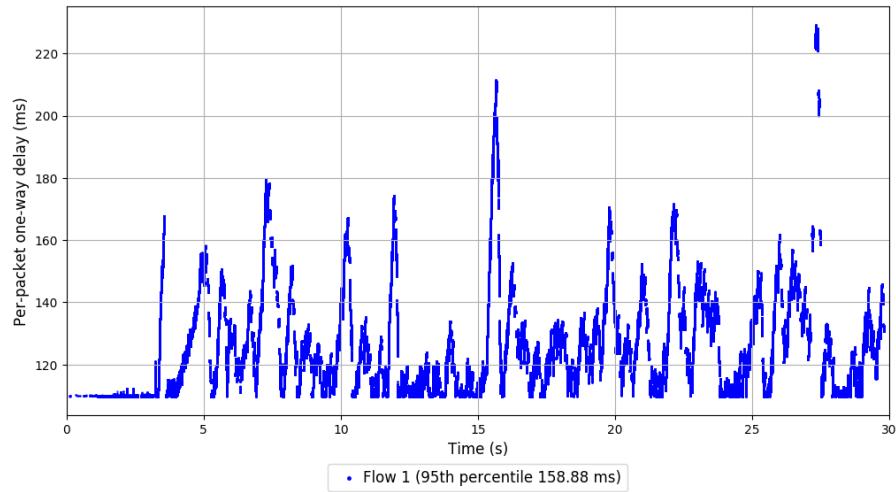
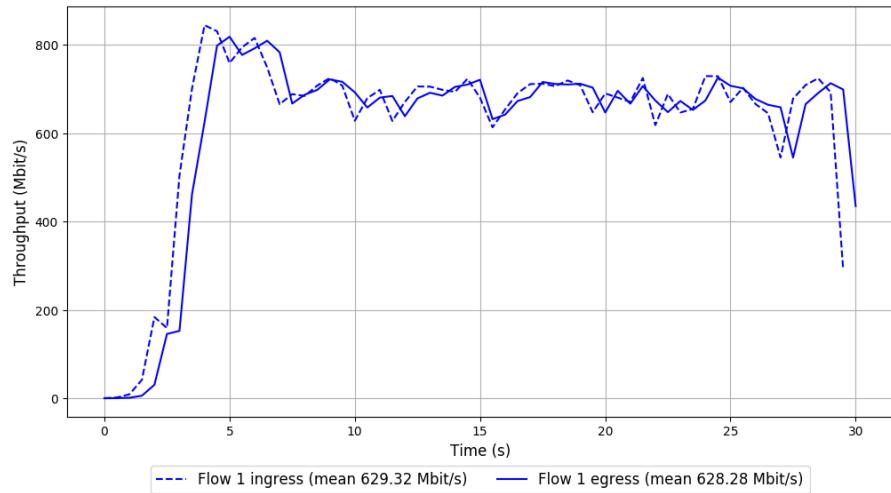


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-12-10 22:45:12
End at: 2018-12-10 22:45:42
Local clock offset: 4.203 ms
Remote clock offset: 3.713 ms

# Below is generated by plot.py at 2018-12-11 00:00:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 628.28 Mbit/s
95th percentile per-packet one-way delay: 158.882 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 628.28 Mbit/s
95th percentile per-packet one-way delay: 158.882 ms
Loss rate: 0.17%
```

Run 5: Report of Indigo-Muses — Data Link

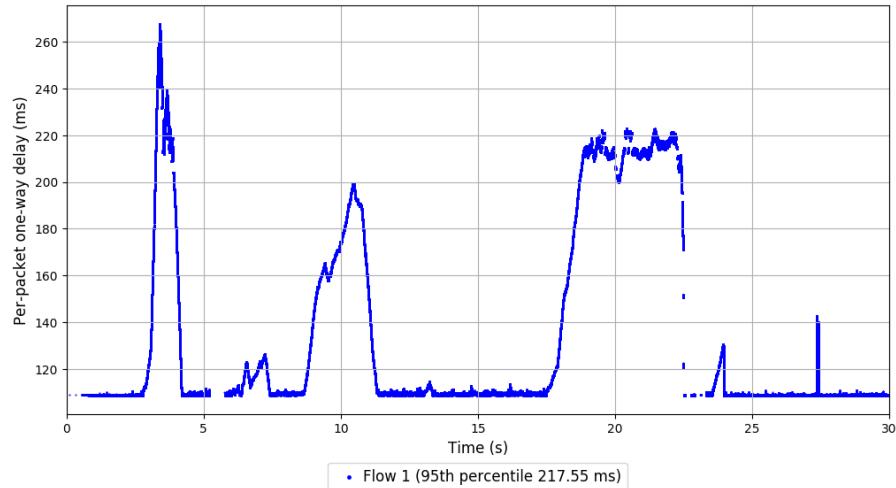
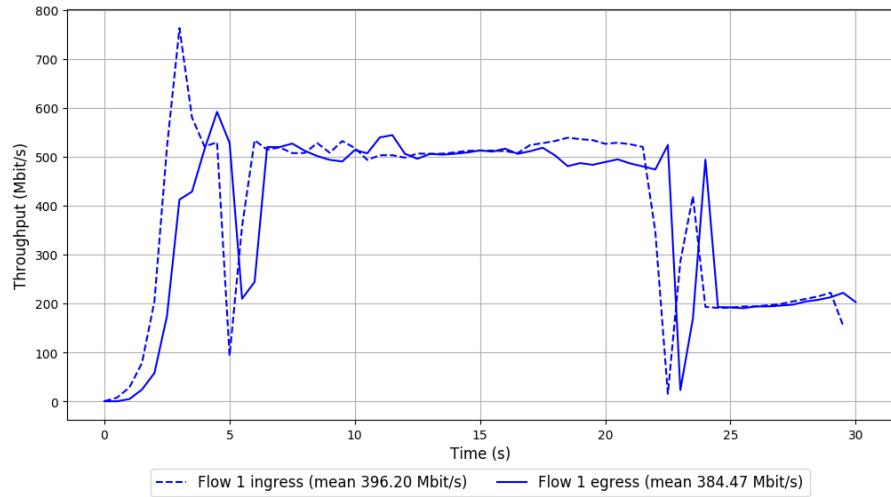


Run 1: Statistics of PCC-Allegro

```
Start at: 2018-12-10 20:39:25
End at: 2018-12-10 20:39:55
Local clock offset: 9.369 ms
Remote clock offset: 10.641 ms

# Below is generated by plot.py at 2018-12-11 00:02:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 384.47 Mbit/s
95th percentile per-packet one-way delay: 217.549 ms
Loss rate: 2.96%
-- Flow 1:
Average throughput: 384.47 Mbit/s
95th percentile per-packet one-way delay: 217.549 ms
Loss rate: 2.96%
```

Run 1: Report of PCC-Allegro — Data Link

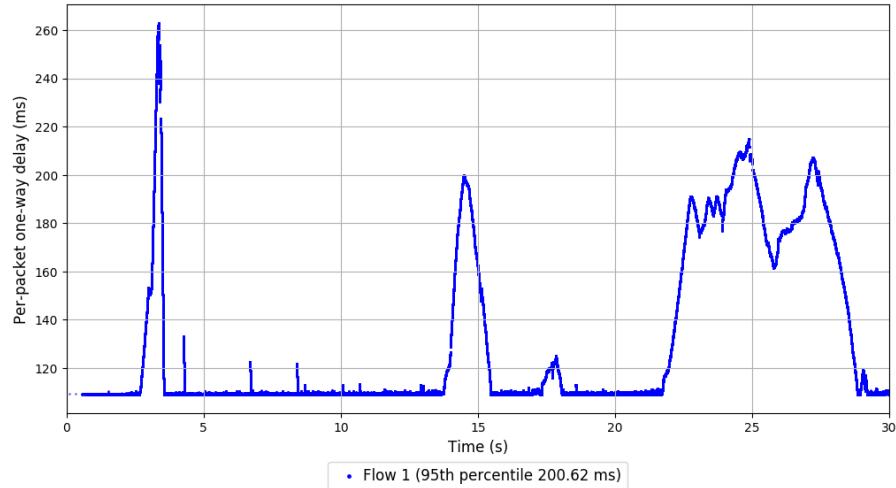
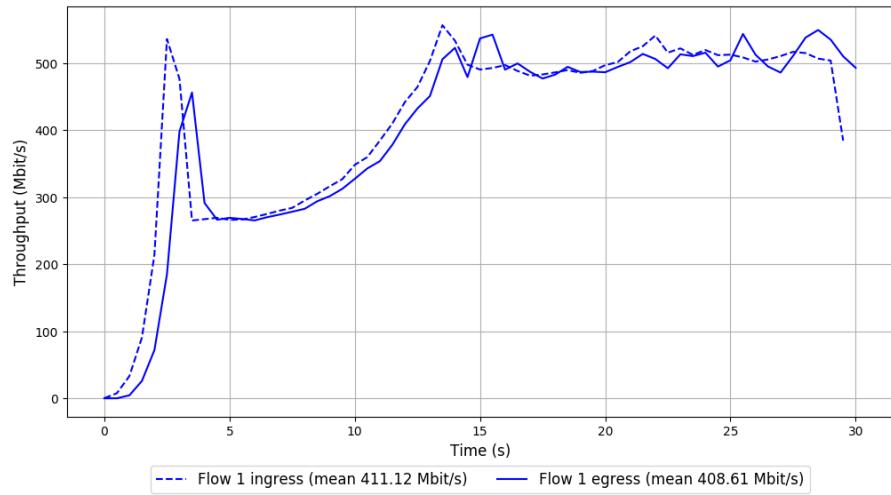


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-12-10 21:07:47
End at: 2018-12-10 21:08:17
Local clock offset: 18.67 ms
Remote clock offset: 20.451 ms

# Below is generated by plot.py at 2018-12-11 00:03:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 408.61 Mbit/s
95th percentile per-packet one-way delay: 200.623 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 408.61 Mbit/s
95th percentile per-packet one-way delay: 200.623 ms
Loss rate: 0.61%
```

Run 2: Report of PCC-Allegro — Data Link

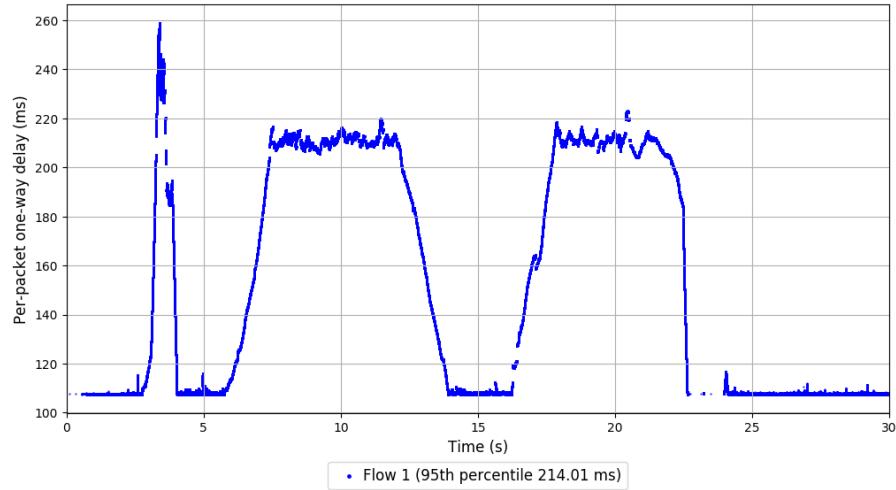
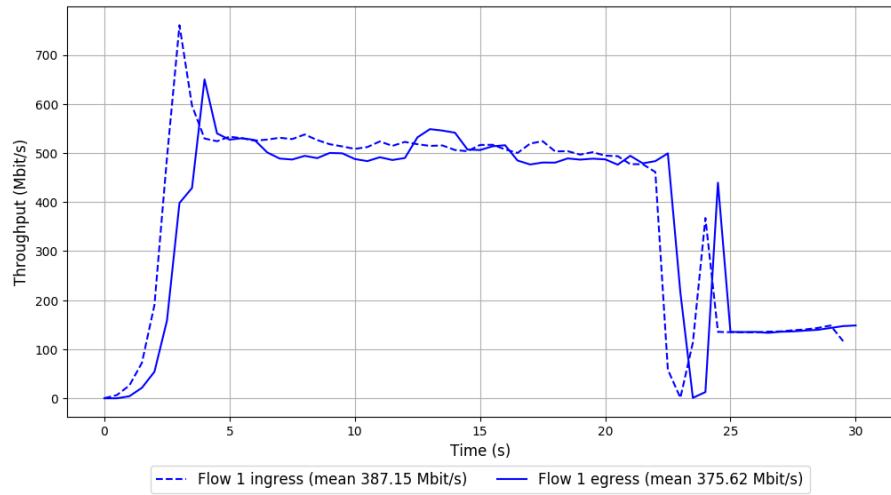


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-12-10 21:36:01
End at: 2018-12-10 21:36:31
Local clock offset: 34.531 ms
Remote clock offset: 36.229 ms

# Below is generated by plot.py at 2018-12-11 00:03:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 375.62 Mbit/s
95th percentile per-packet one-way delay: 214.012 ms
Loss rate: 2.98%
-- Flow 1:
Average throughput: 375.62 Mbit/s
95th percentile per-packet one-way delay: 214.012 ms
Loss rate: 2.98%
```

Run 3: Report of PCC-Allegro — Data Link

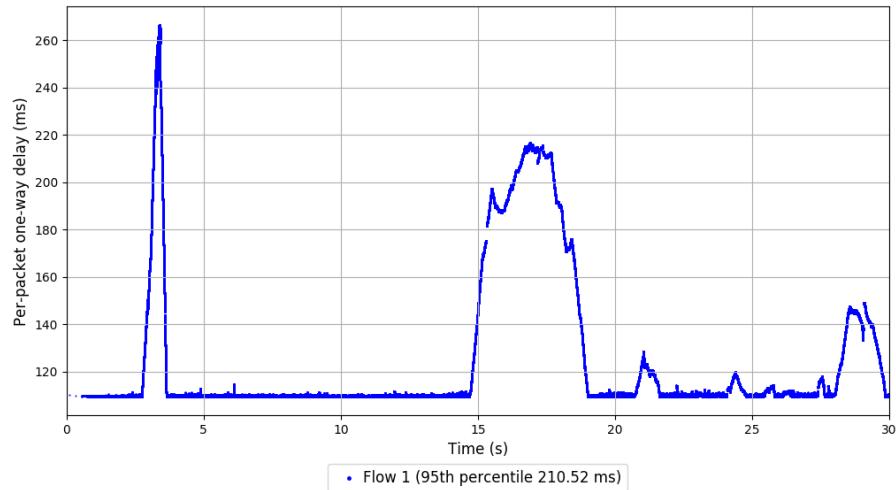
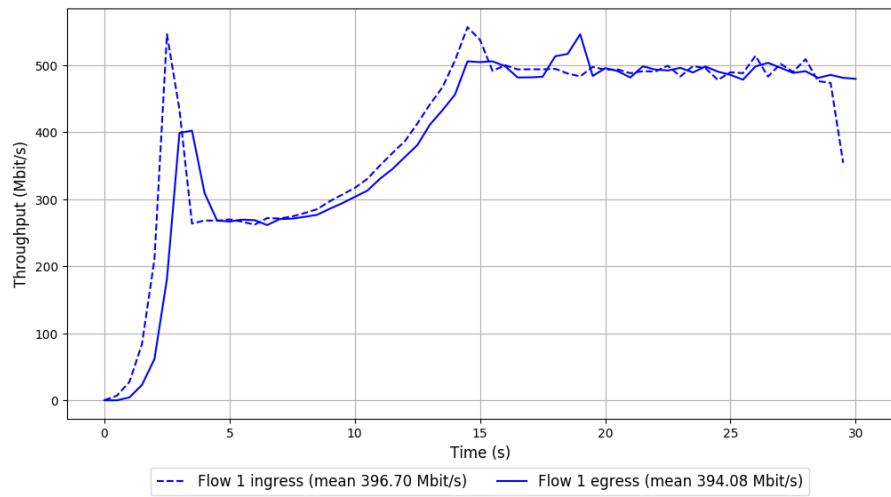


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-12-10 22:04:38
End at: 2018-12-10 22:05:08
Local clock offset: 8.926 ms
Remote clock offset: 10.089 ms

# Below is generated by plot.py at 2018-12-11 00:13:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 394.08 Mbit/s
95th percentile per-packet one-way delay: 210.519 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 394.08 Mbit/s
95th percentile per-packet one-way delay: 210.519 ms
Loss rate: 0.66%
```

Run 4: Report of PCC-Allegro — Data Link

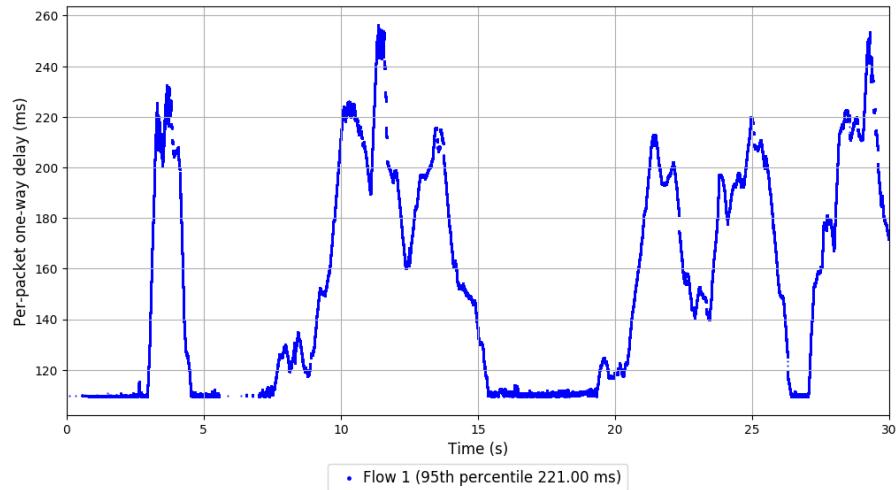
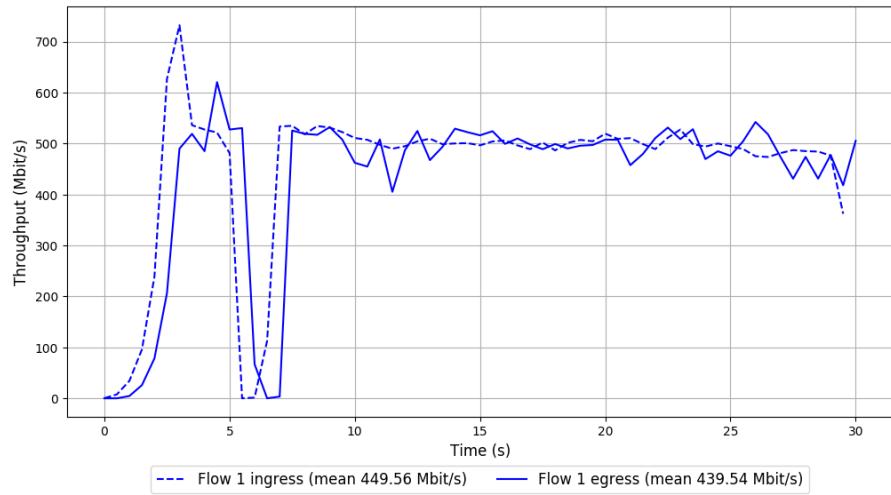


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-12-10 22:33:05
End at: 2018-12-10 22:33:35
Local clock offset: 3.307 ms
Remote clock offset: 3.763 ms

# Below is generated by plot.py at 2018-12-11 00:14:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 439.54 Mbit/s
95th percentile per-packet one-way delay: 221.005 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 439.54 Mbit/s
95th percentile per-packet one-way delay: 221.005 ms
Loss rate: 2.23%
```

Run 5: Report of PCC-Allegro — Data Link

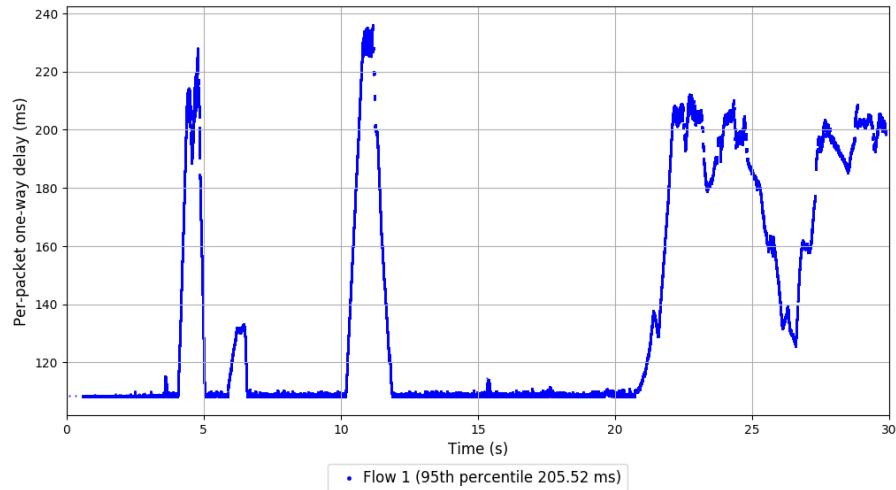
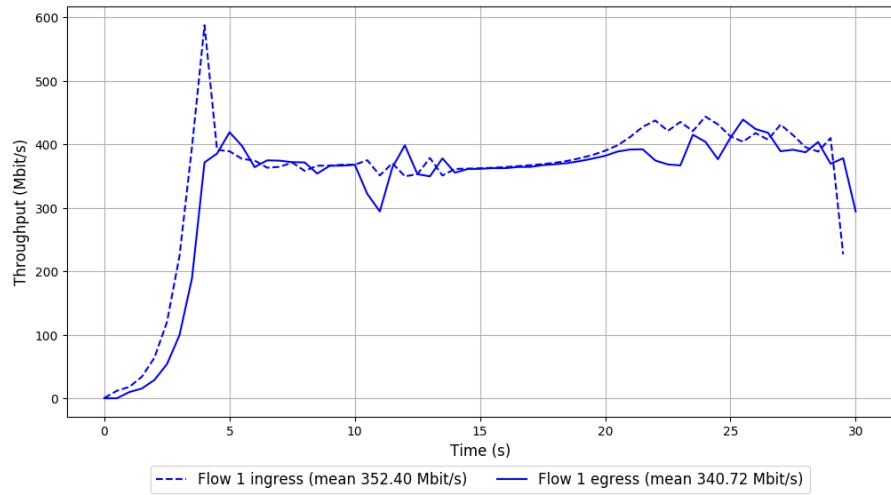


Run 1: Statistics of PCC-Expr

```
Start at: 2018-12-10 20:37:41
End at: 2018-12-10 20:38:11
Local clock offset: 8.282 ms
Remote clock offset: 9.059 ms

# Below is generated by plot.py at 2018-12-11 00:14:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 340.72 Mbit/s
95th percentile per-packet one-way delay: 205.523 ms
Loss rate: 3.31%
-- Flow 1:
Average throughput: 340.72 Mbit/s
95th percentile per-packet one-way delay: 205.523 ms
Loss rate: 3.31%
```

Run 1: Report of PCC-Expr — Data Link

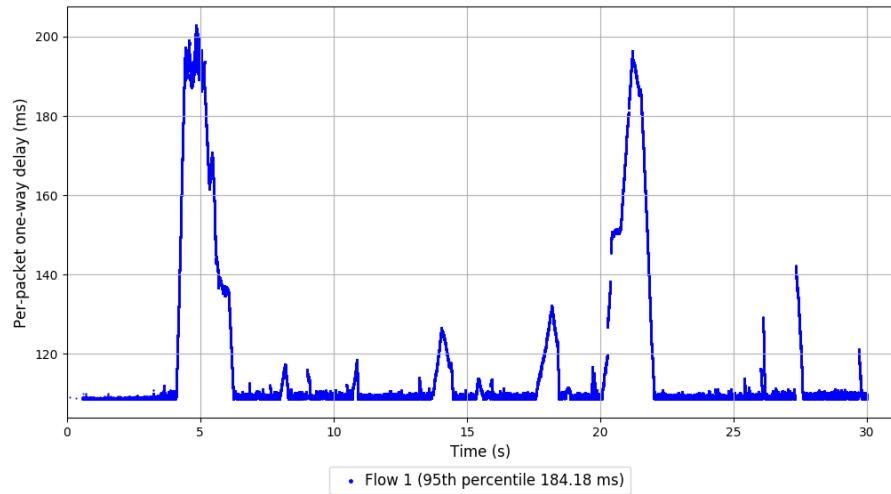
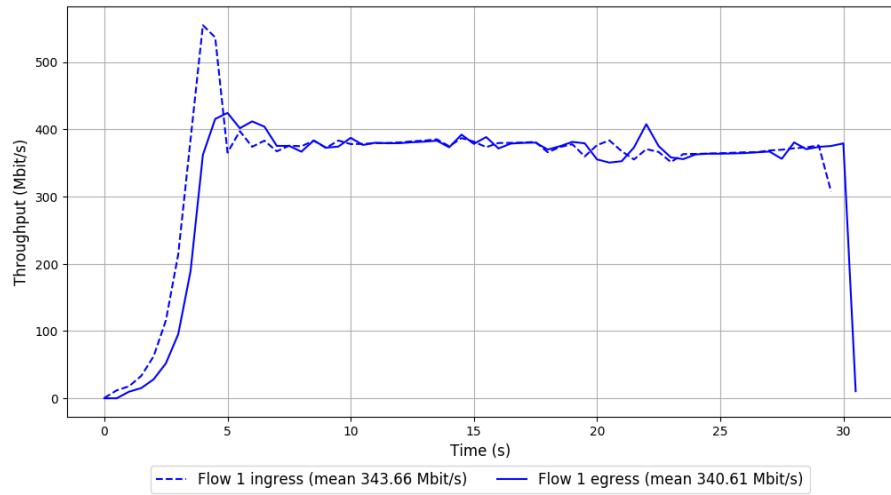


Run 2: Statistics of PCC-Expr

```
Start at: 2018-12-10 21:06:04
End at: 2018-12-10 21:06:34
Local clock offset: 19.716 ms
Remote clock offset: 21.22 ms

# Below is generated by plot.py at 2018-12-11 00:14:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 340.61 Mbit/s
95th percentile per-packet one-way delay: 184.182 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 340.61 Mbit/s
95th percentile per-packet one-way delay: 184.182 ms
Loss rate: 0.89%
```

Run 2: Report of PCC-Expr — Data Link

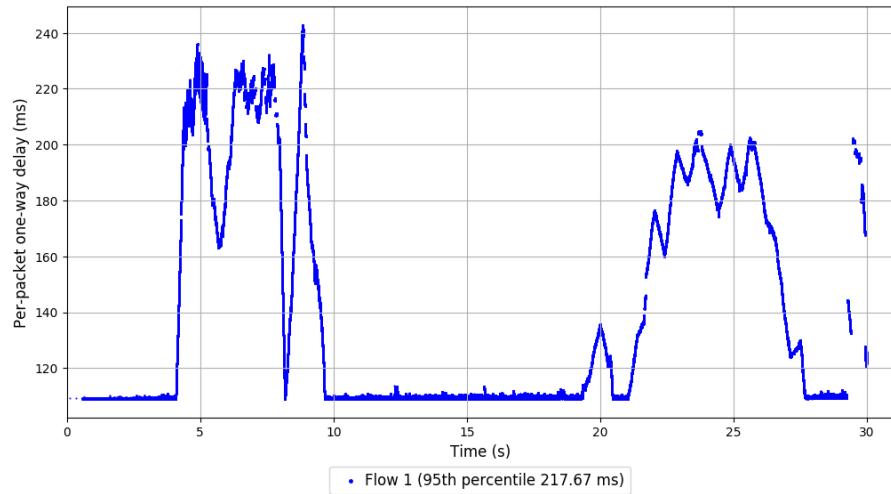
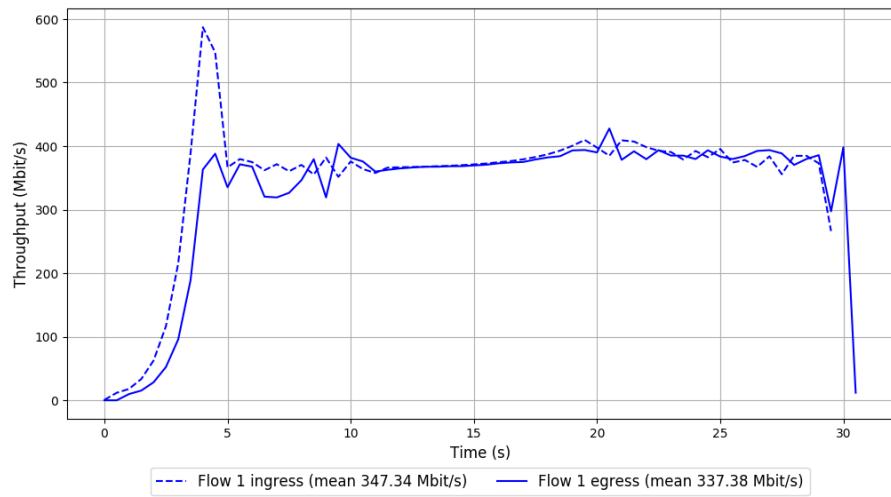


Run 3: Statistics of PCC-Expr

```
Start at: 2018-12-10 21:34:18
End at: 2018-12-10 21:34:48
Local clock offset: 36.859 ms
Remote clock offset: 40.869 ms

# Below is generated by plot.py at 2018-12-11 00:14:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 337.38 Mbit/s
95th percentile per-packet one-way delay: 217.669 ms
Loss rate: 2.86%
-- Flow 1:
Average throughput: 337.38 Mbit/s
95th percentile per-packet one-way delay: 217.669 ms
Loss rate: 2.86%
```

Run 3: Report of PCC-Expr — Data Link

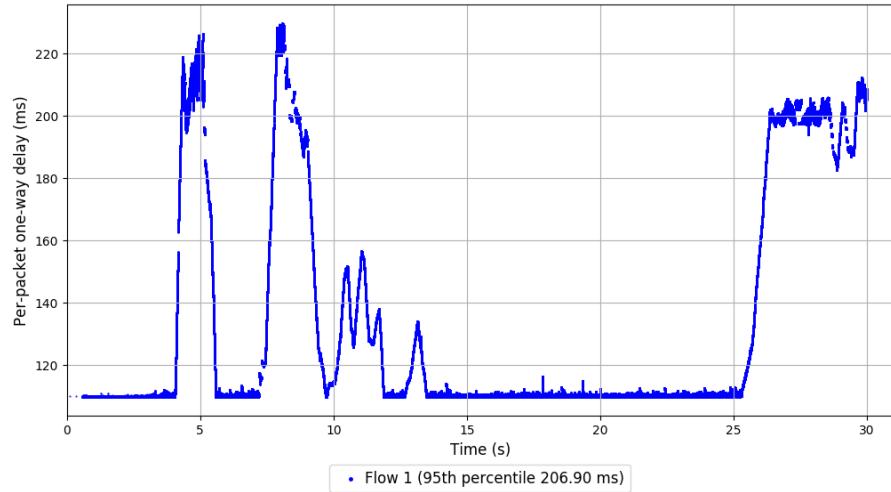
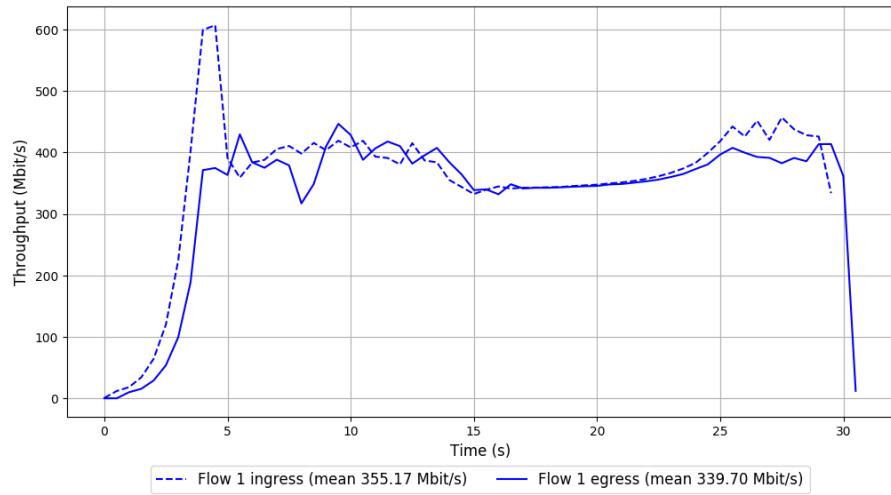


Run 4: Statistics of PCC-Expr

```
Start at: 2018-12-10 22:02:54
End at: 2018-12-10 22:03:24
Local clock offset: 7.341 ms
Remote clock offset: 9.505 ms

# Below is generated by plot.py at 2018-12-11 00:14:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 339.70 Mbit/s
95th percentile per-packet one-way delay: 206.901 ms
Loss rate: 4.36%
-- Flow 1:
Average throughput: 339.70 Mbit/s
95th percentile per-packet one-way delay: 206.901 ms
Loss rate: 4.36%
```

Run 4: Report of PCC-Expr — Data Link

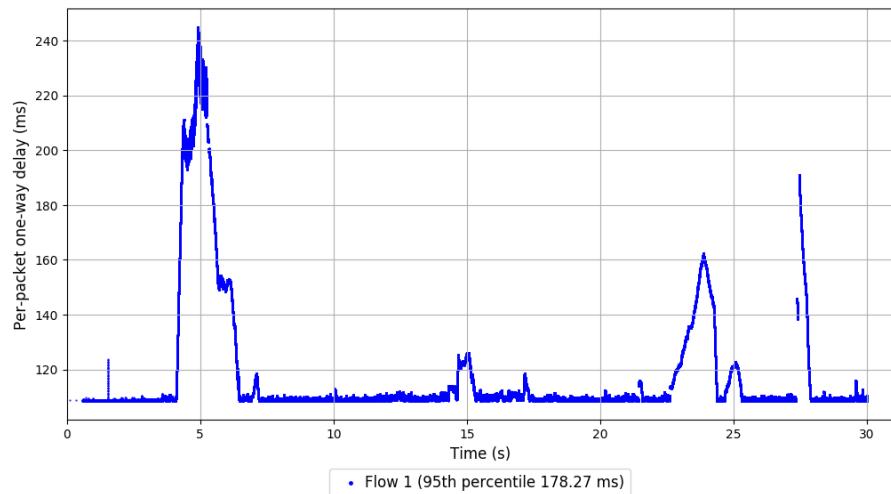
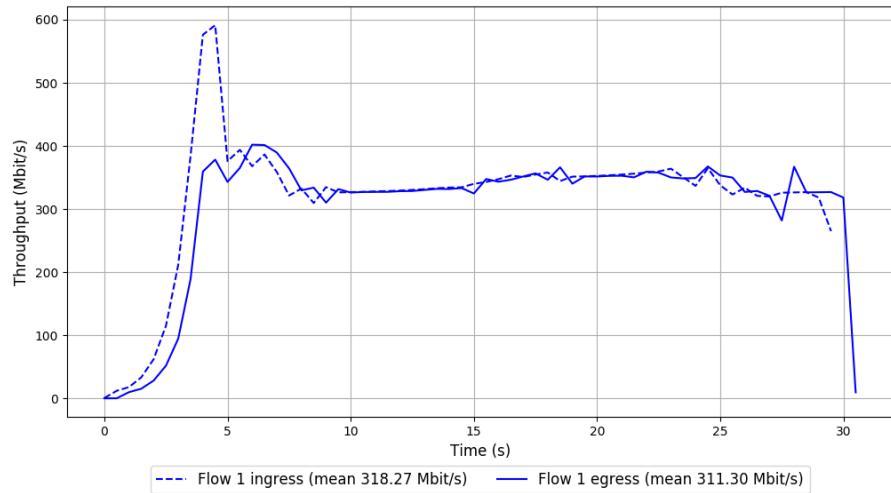


Run 5: Statistics of PCC-Expr

```
Start at: 2018-12-10 22:31:24
End at: 2018-12-10 22:31:54
Local clock offset: 3.944 ms
Remote clock offset: 3.641 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 311.30 Mbit/s
95th percentile per-packet one-way delay: 178.271 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 311.30 Mbit/s
95th percentile per-packet one-way delay: 178.271 ms
Loss rate: 2.19%
```

Run 5: Report of PCC-Expr — Data Link

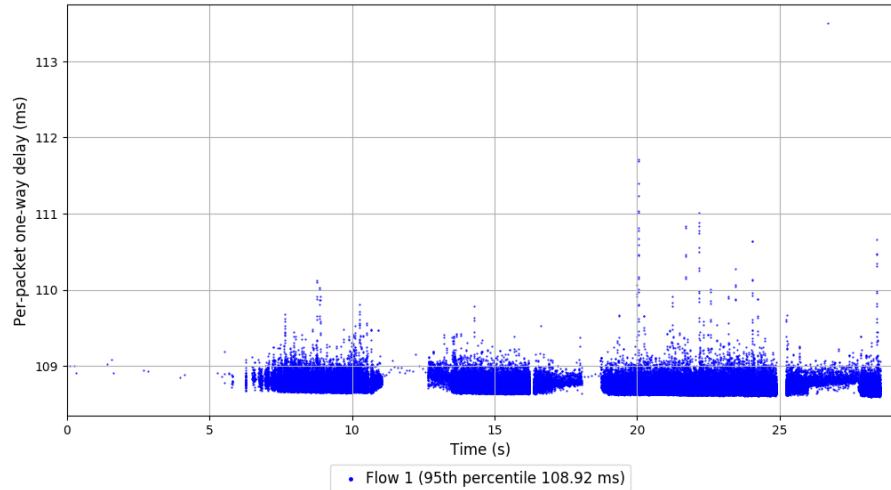
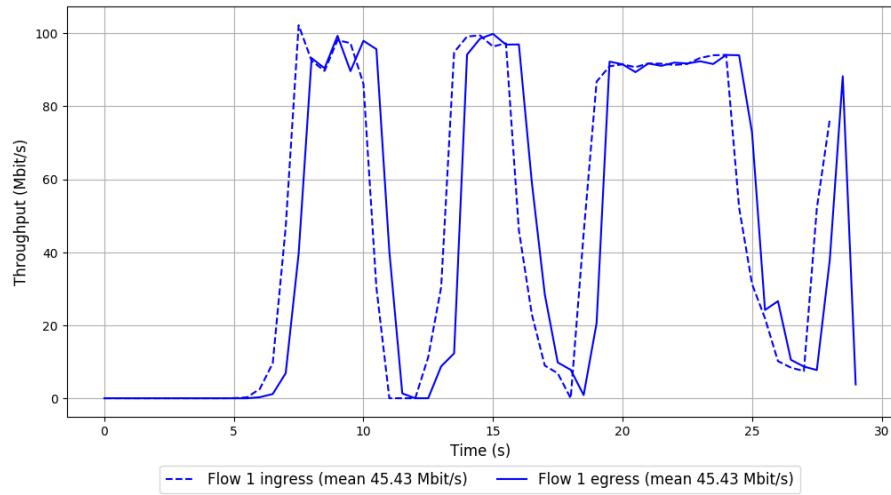


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-12-10 20:41:02
End at: 2018-12-10 20:41:32
Local clock offset: 11.495 ms
Remote clock offset: 13.165 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.43 Mbit/s
95th percentile per-packet one-way delay: 108.915 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 45.43 Mbit/s
95th percentile per-packet one-way delay: 108.915 ms
Loss rate: 0.00%
```

Run 1: Report of QUIC Cubic — Data Link

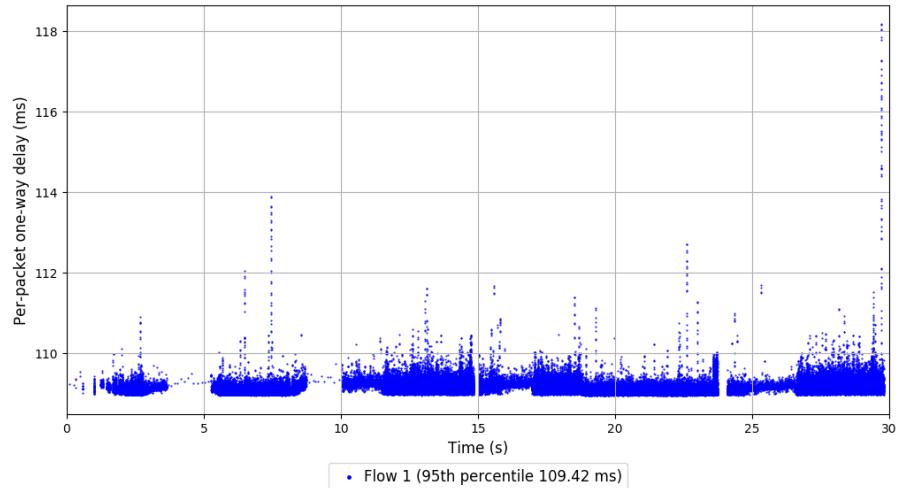
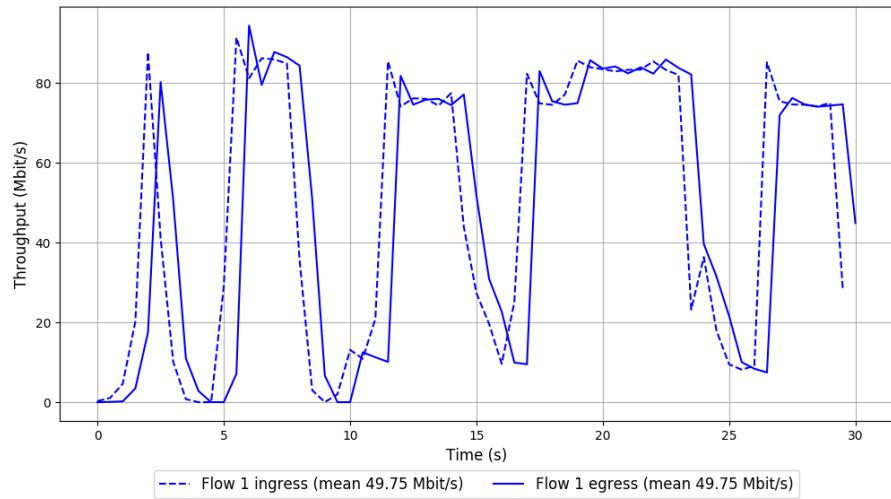


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-12-10 21:09:25
End at: 2018-12-10 21:09:56
Local clock offset: 18.315 ms
Remote clock offset: 20.349 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.75 Mbit/s
95th percentile per-packet one-way delay: 109.423 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 49.75 Mbit/s
95th percentile per-packet one-way delay: 109.423 ms
Loss rate: 0.00%
```

Run 2: Report of QUIC Cubic — Data Link

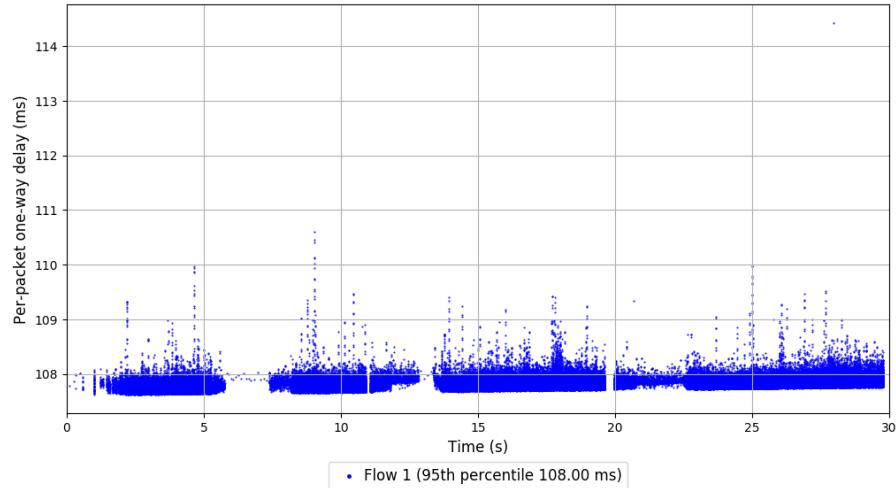
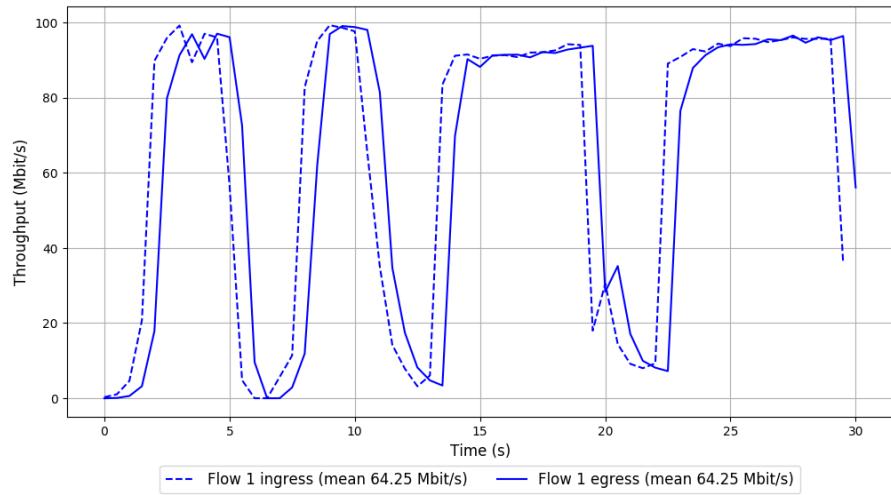


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-12-10 21:37:38
End at: 2018-12-10 21:38:08
Local clock offset: 29.738 ms
Remote clock offset: 31.023 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.25 Mbit/s
95th percentile per-packet one-way delay: 107.999 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 64.25 Mbit/s
95th percentile per-packet one-way delay: 107.999 ms
Loss rate: 0.00%
```

Run 3: Report of QUIC Cubic — Data Link

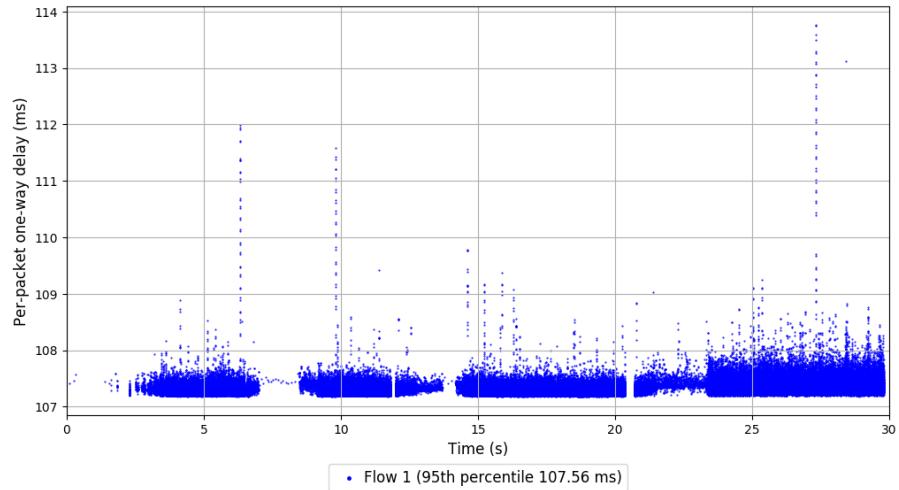
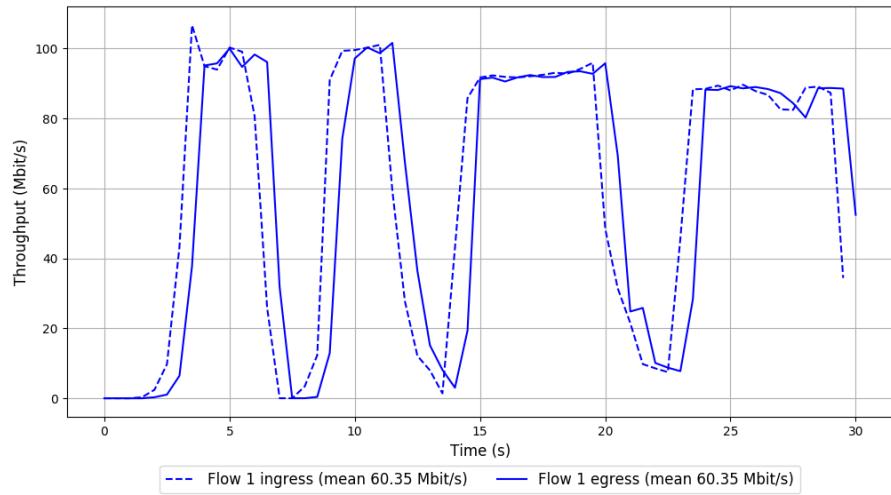


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-12-10 22:06:16
End at: 2018-12-10 22:06:46
Local clock offset: 10.348 ms
Remote clock offset: 9.934 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.35 Mbit/s
95th percentile per-packet one-way delay: 107.564 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.35 Mbit/s
95th percentile per-packet one-way delay: 107.564 ms
Loss rate: 0.00%
```

Run 4: Report of QUIC Cubic — Data Link

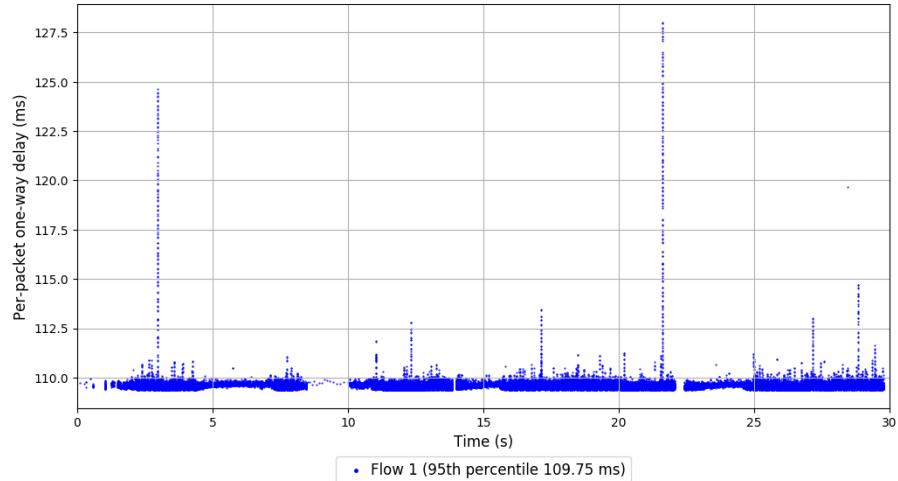
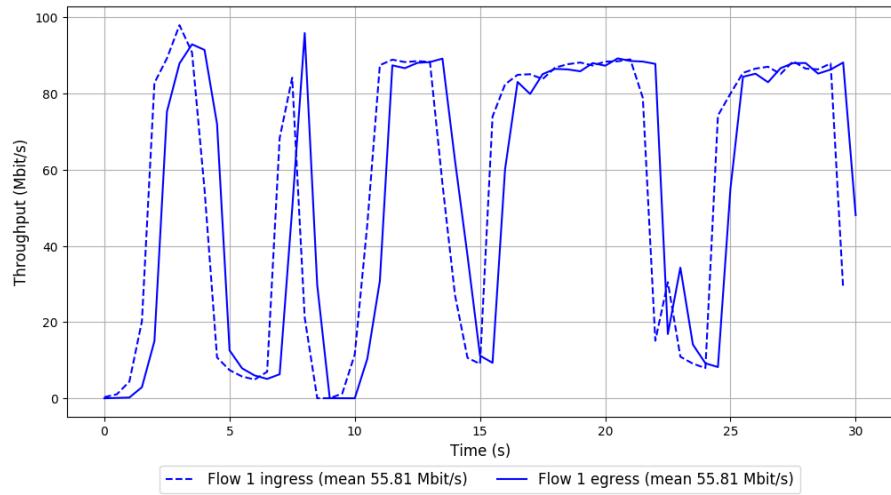


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-12-10 22:34:47
End at: 2018-12-10 22:35:17
Local clock offset: 3.503 ms
Remote clock offset: 3.86 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.81 Mbit/s
95th percentile per-packet one-way delay: 109.752 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 55.81 Mbit/s
95th percentile per-packet one-way delay: 109.752 ms
Loss rate: 0.00%
```

Run 5: Report of QUIC Cubic — Data Link

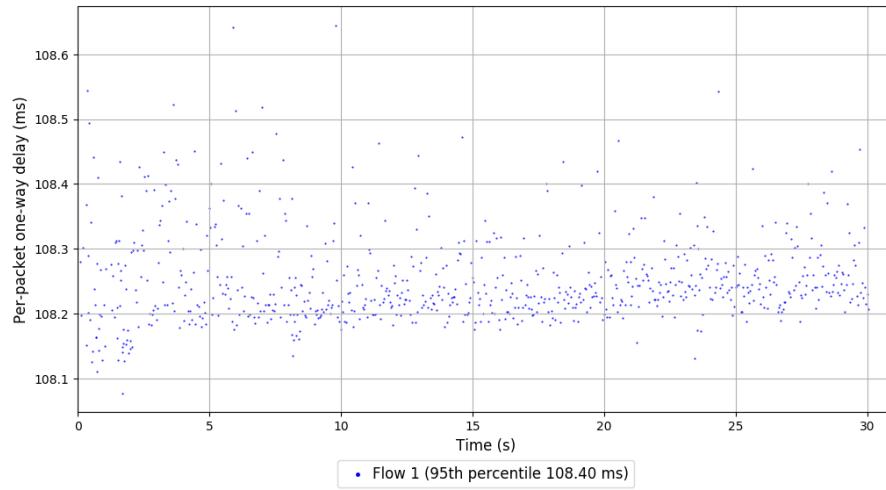
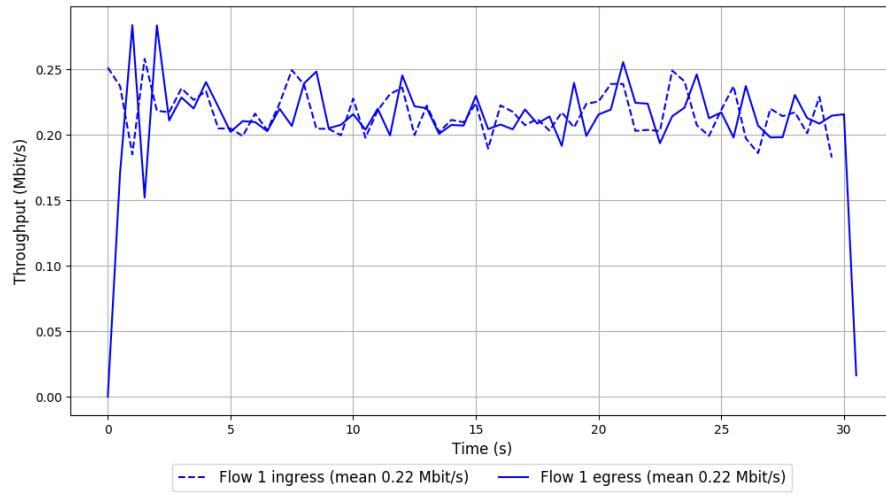


```
Run 1: Statistics of SCReAM

Start at: 2018-12-10 20:45:20
End at: 2018-12-10 20:45:50
Local clock offset: 14.91 ms
Remote clock offset: 15.114 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.398 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.398 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

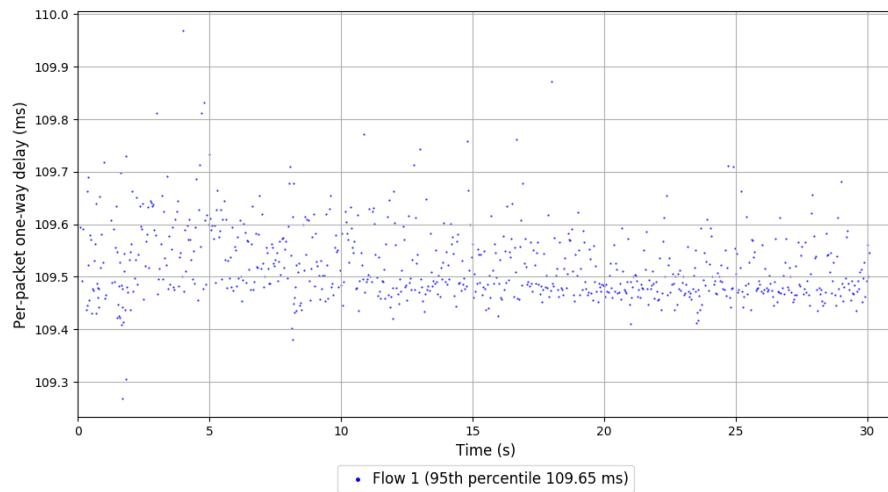
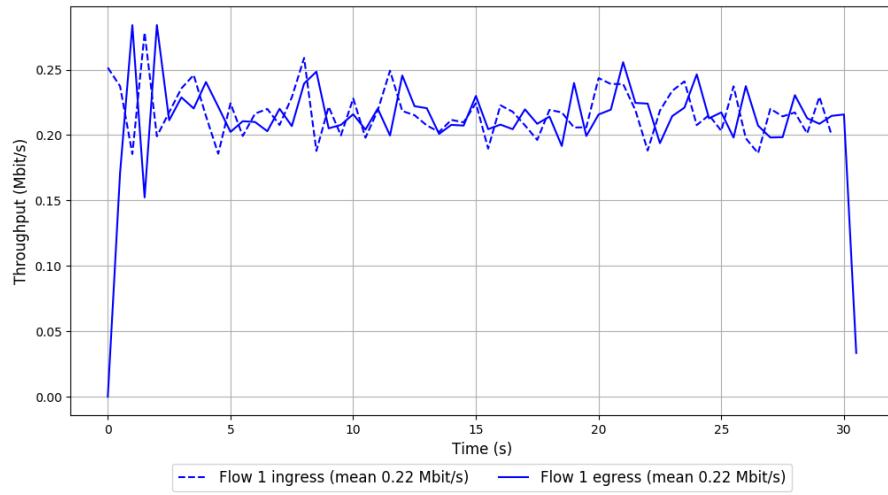


Run 2: Statistics of SCReAM

```
Start at: 2018-12-10 21:13:37
End at: 2018-12-10 21:14:07
Local clock offset: 19.384 ms
Remote clock offset: 21.524 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.646 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.646 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

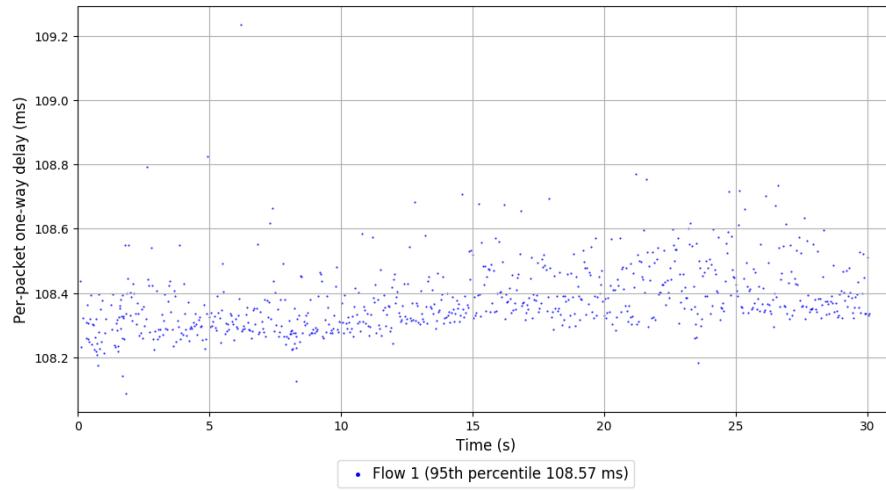
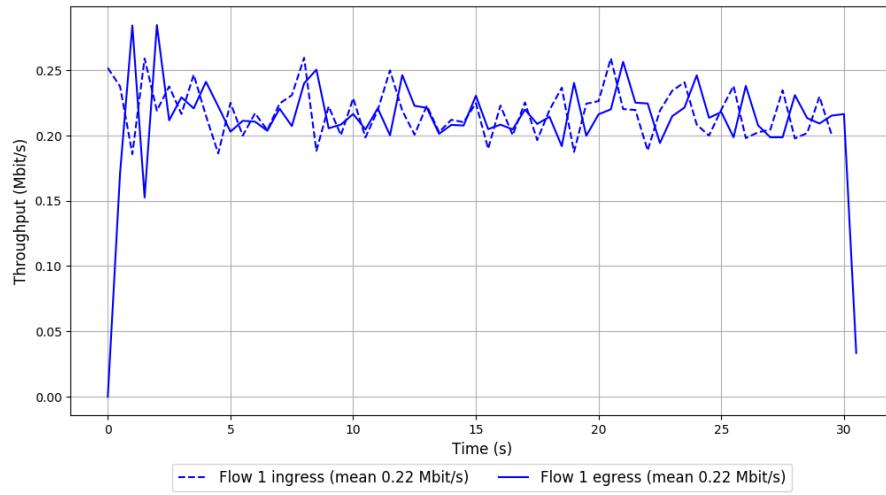


Run 3: Statistics of SCReAM

```
Start at: 2018-12-10 21:42:02
End at: 2018-12-10 21:42:32
Local clock offset: 18.744 ms
Remote clock offset: 19.395 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.569 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.569 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

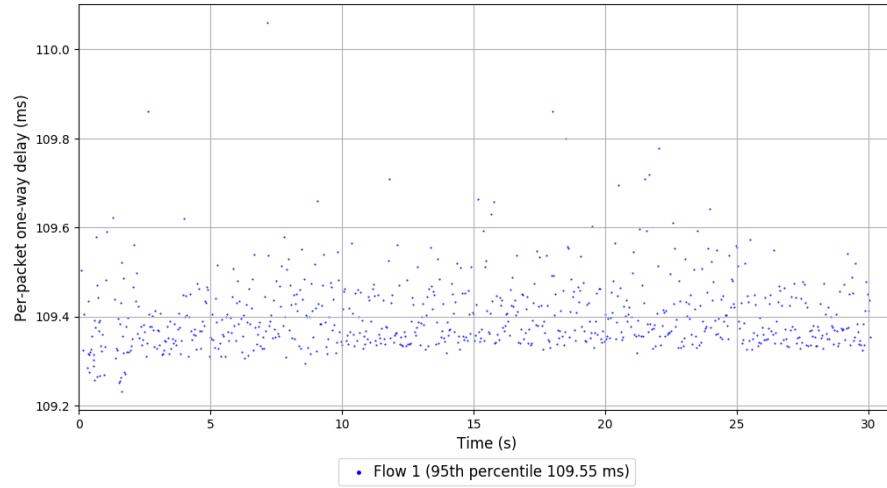
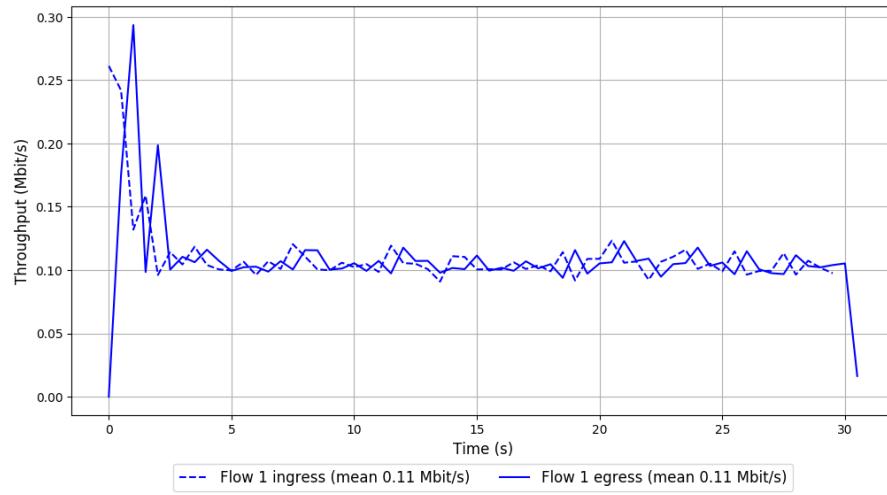


Run 4: Statistics of SCReAM

```
Start at: 2018-12-10 22:10:37
End at: 2018-12-10 22:11:07
Local clock offset: 8.5 ms
Remote clock offset: 8.899 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 109.549 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 109.549 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

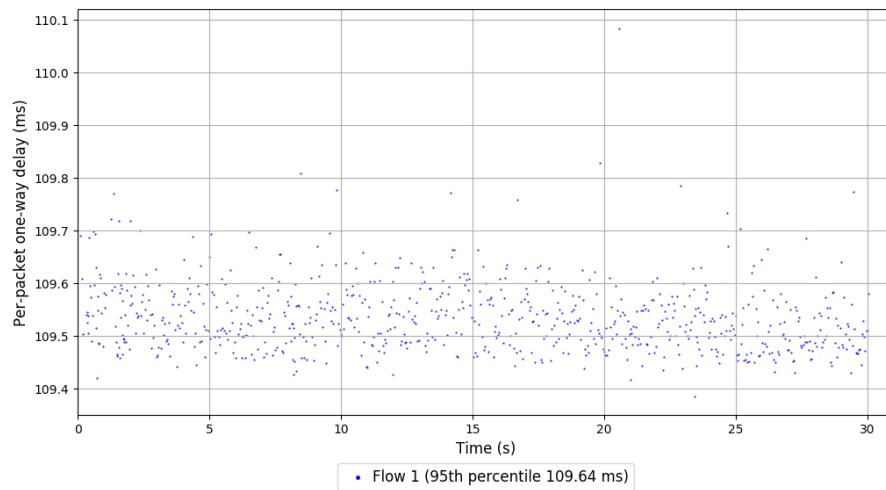
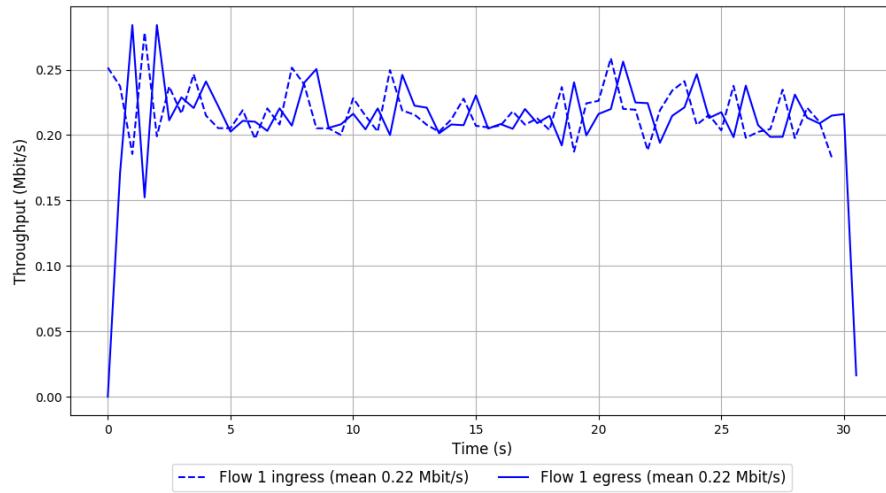


Run 5: Statistics of SCReAM

```
Start at: 2018-12-10 22:39:05
End at: 2018-12-10 22:39:35
Local clock offset: 3.793 ms
Remote clock offset: 4.571 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.641 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.641 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

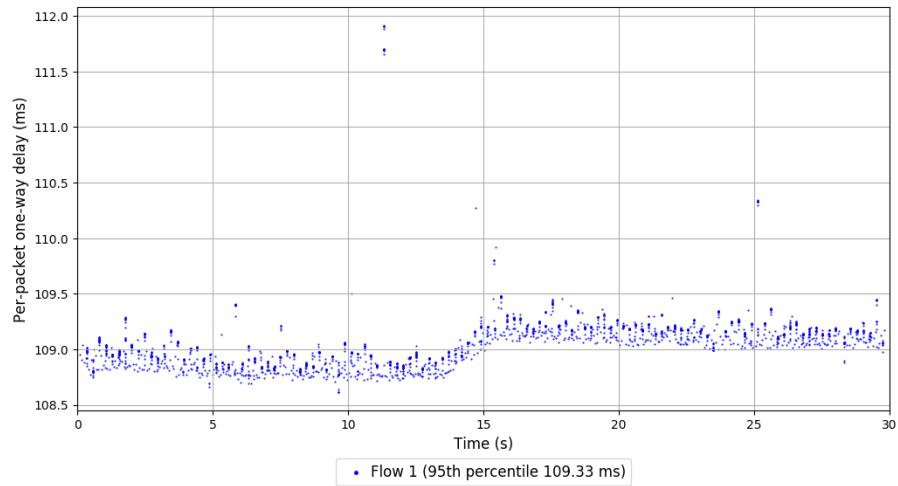
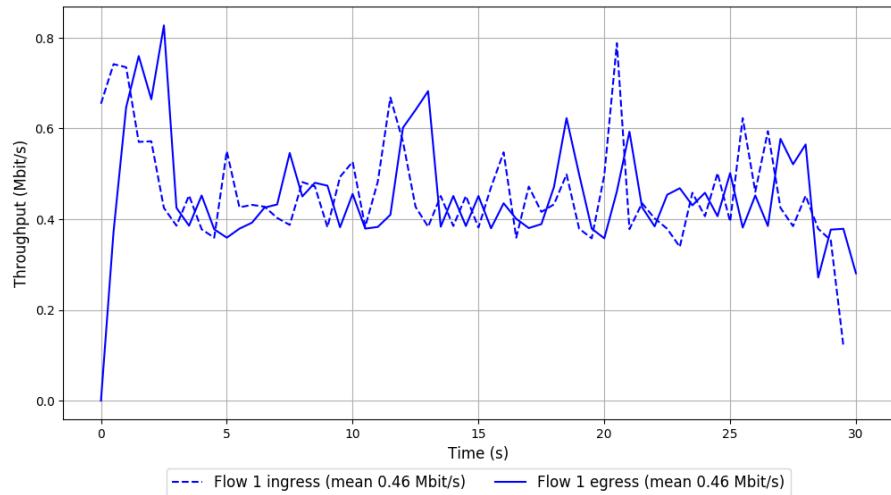


Run 1: Statistics of Sprout

```
Start at: 2018-12-10 20:28:20
End at: 2018-12-10 20:28:50
Local clock offset: 2.442 ms
Remote clock offset: 3.351 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 109.335 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 109.335 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

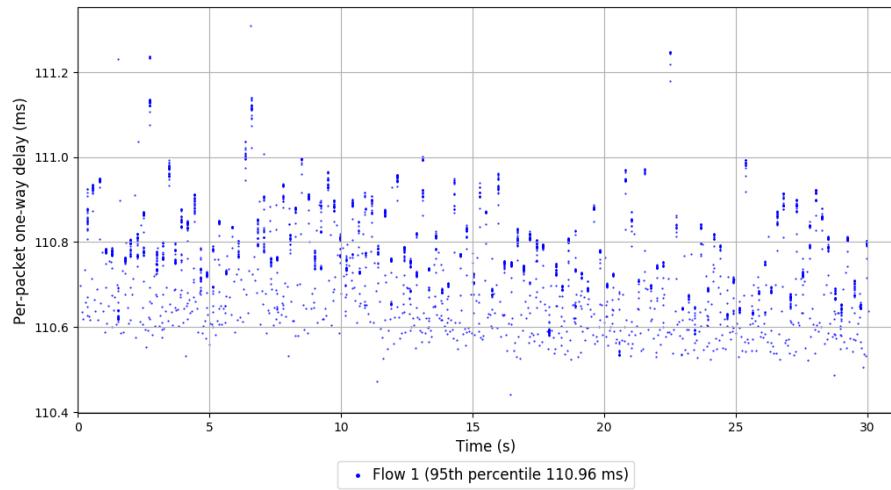
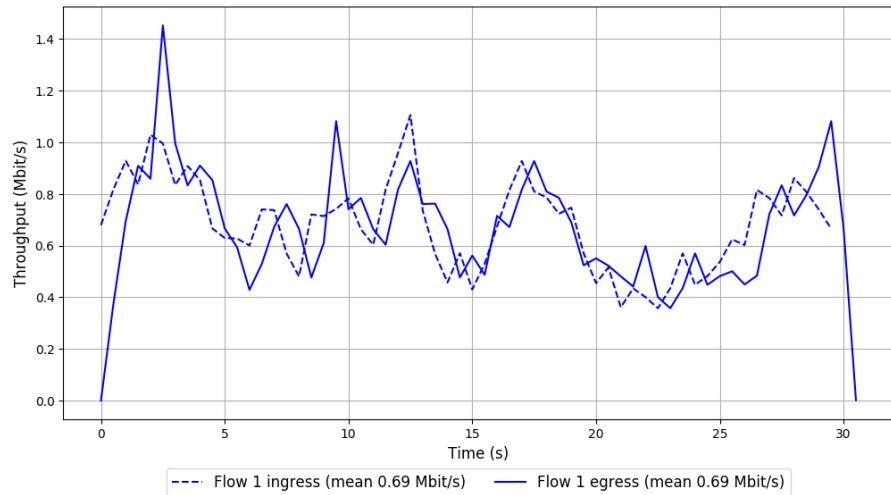


Run 2: Statistics of Sprout

```
Start at: 2018-12-10 20:56:13
End at: 2018-12-10 20:56:43
Local clock offset: 17.958 ms
Remote clock offset: 21.027 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 110.963 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 110.963 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

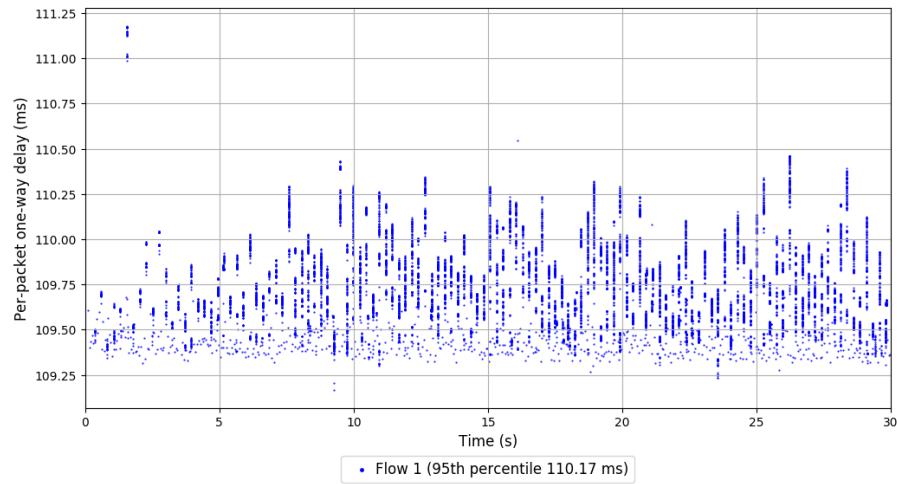
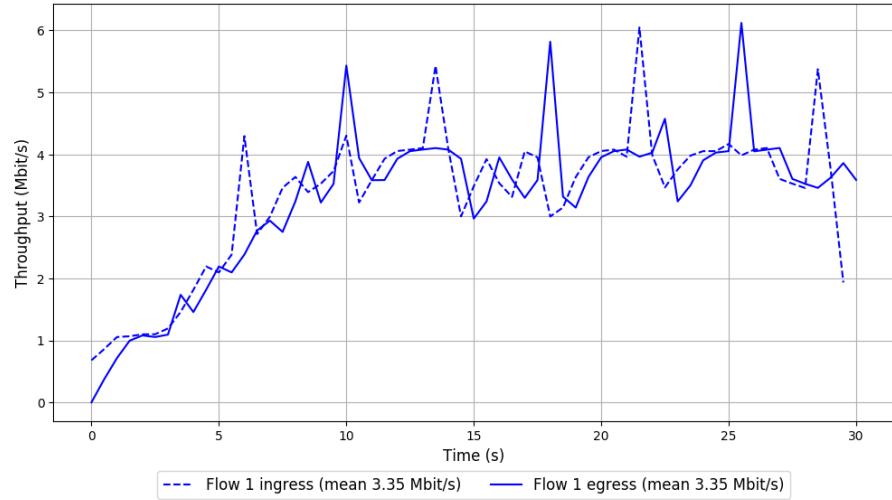


Run 3: Statistics of Sprout

```
Start at: 2018-12-10 21:24:33
End at: 2018-12-10 21:25:03
Local clock offset: 27.085 ms
Remote clock offset: 29.831 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.35 Mbit/s
95th percentile per-packet one-way delay: 110.175 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.35 Mbit/s
95th percentile per-packet one-way delay: 110.175 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

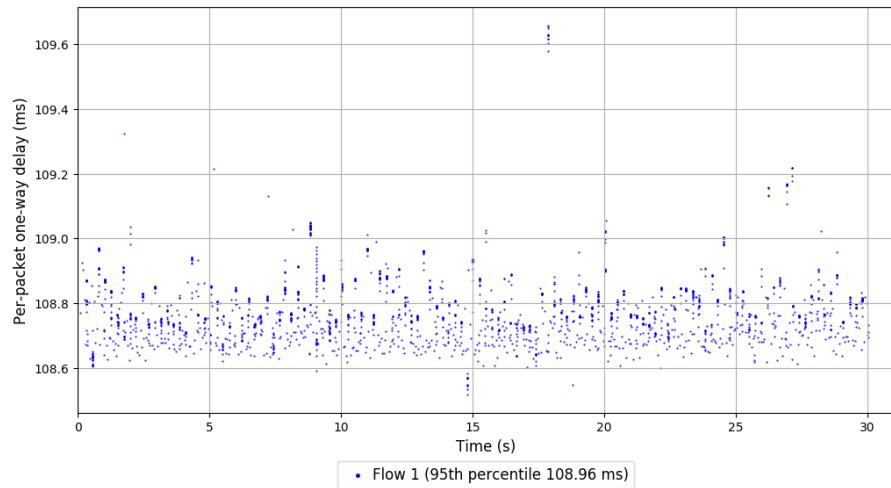
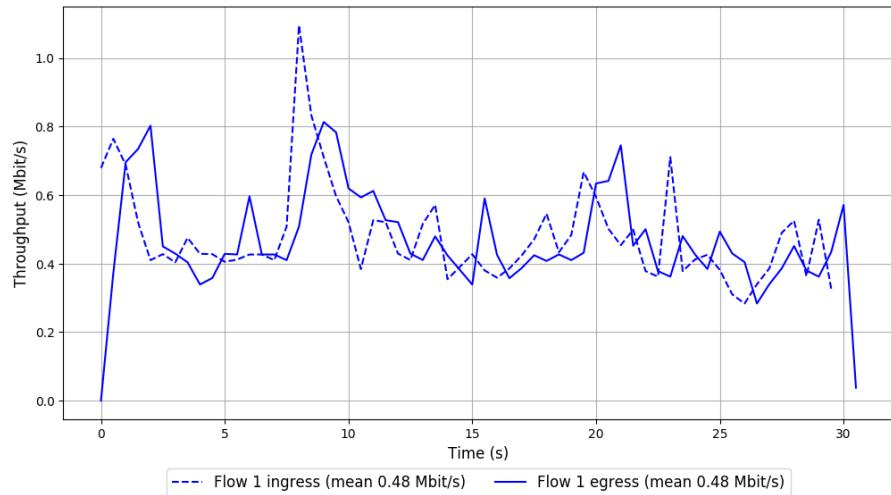


Run 4: Statistics of Sprout

```
Start at: 2018-12-10 21:53:01
End at: 2018-12-10 21:53:31
Local clock offset: 9.084 ms
Remote clock offset: 10.093 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 108.962 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 108.962 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

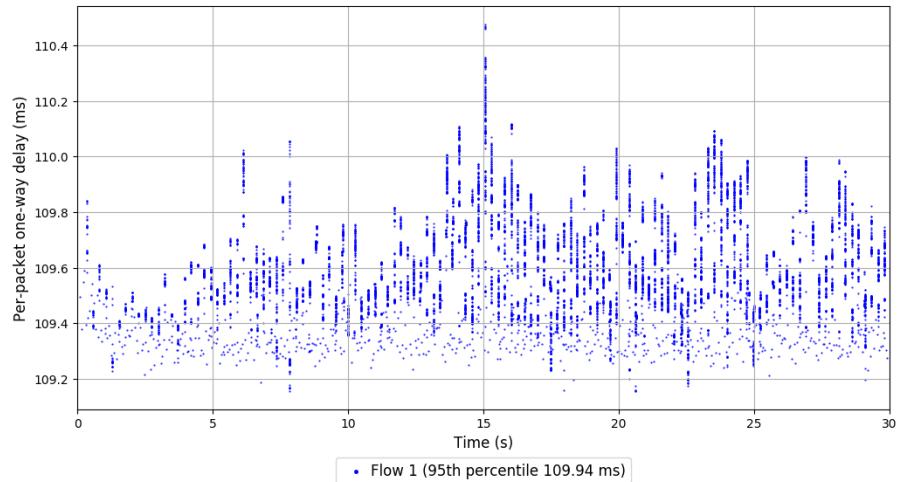
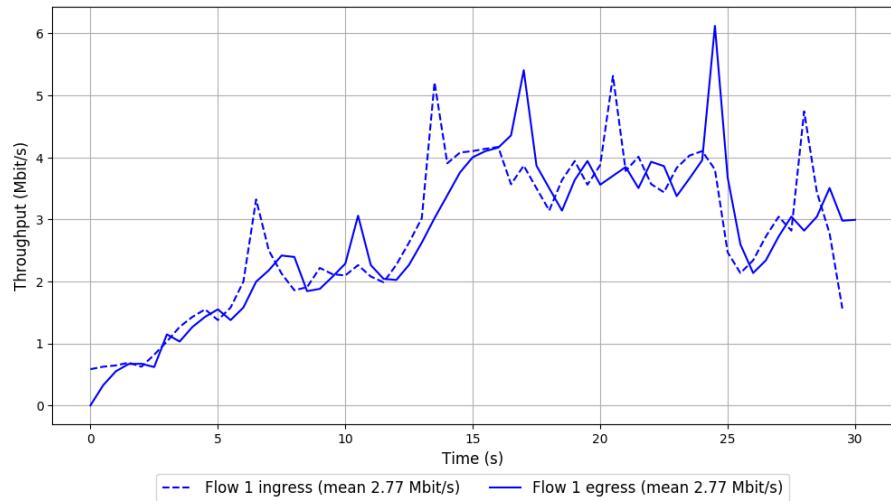


Run 5: Statistics of Sprout

```
Start at: 2018-12-10 22:21:31
End at: 2018-12-10 22:22:01
Local clock offset: 3.743 ms
Remote clock offset: 4.043 ms

# Below is generated by plot.py at 2018-12-11 00:14:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.77 Mbit/s
95th percentile per-packet one-way delay: 109.937 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.77 Mbit/s
95th percentile per-packet one-way delay: 109.937 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link

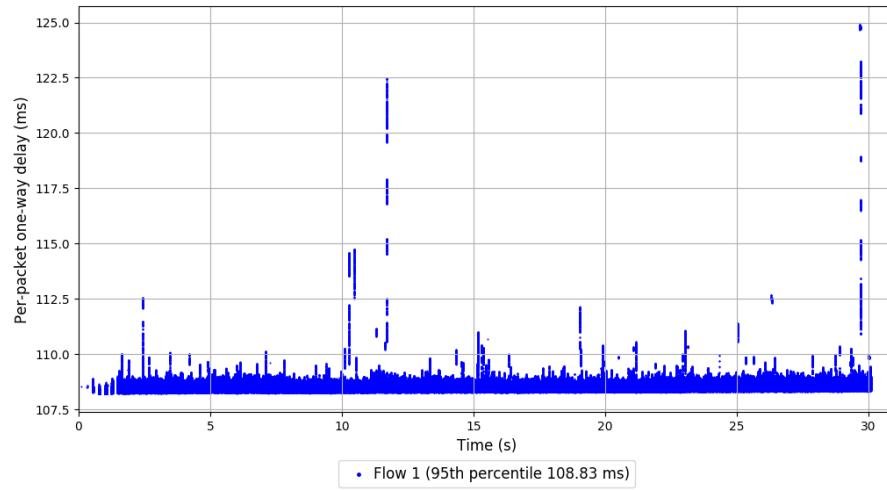
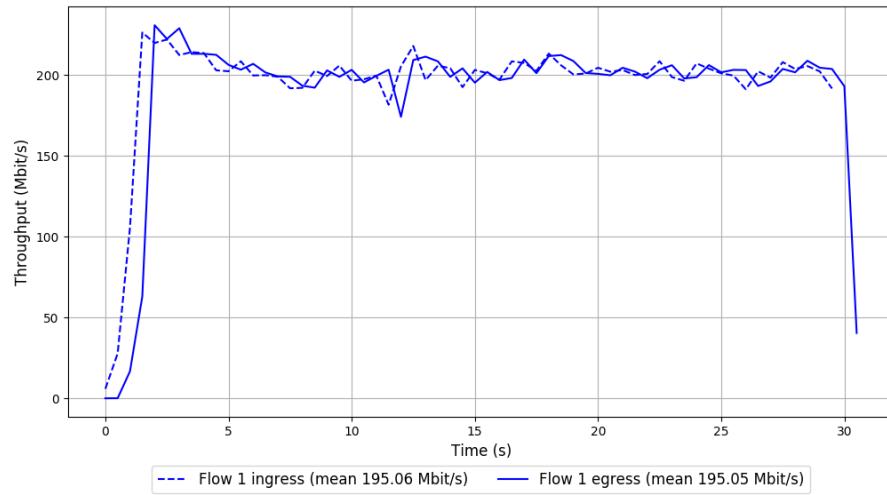


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-12-10 20:43:50
End at: 2018-12-10 20:44:20
Local clock offset: 17.261 ms
Remote clock offset: 18.57 ms

# Below is generated by plot.py at 2018-12-11 00:16:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 195.05 Mbit/s
95th percentile per-packet one-way delay: 108.827 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 195.05 Mbit/s
95th percentile per-packet one-way delay: 108.827 ms
Loss rate: 0.00%
```

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

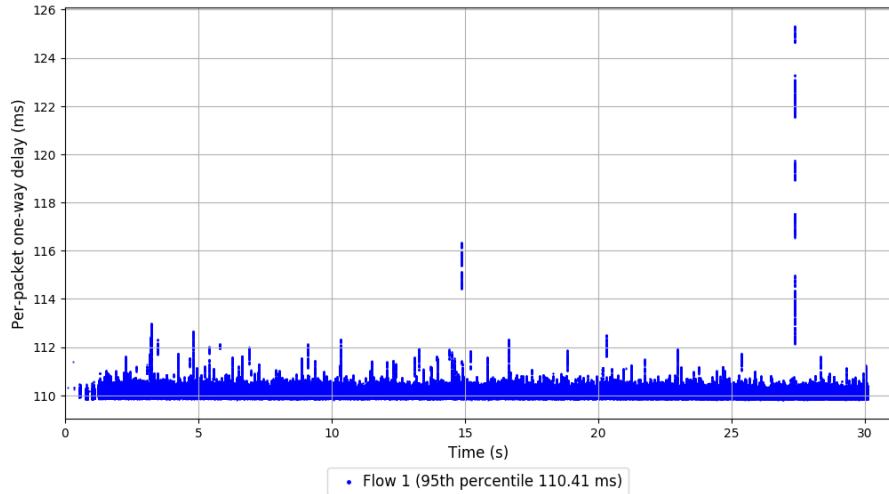
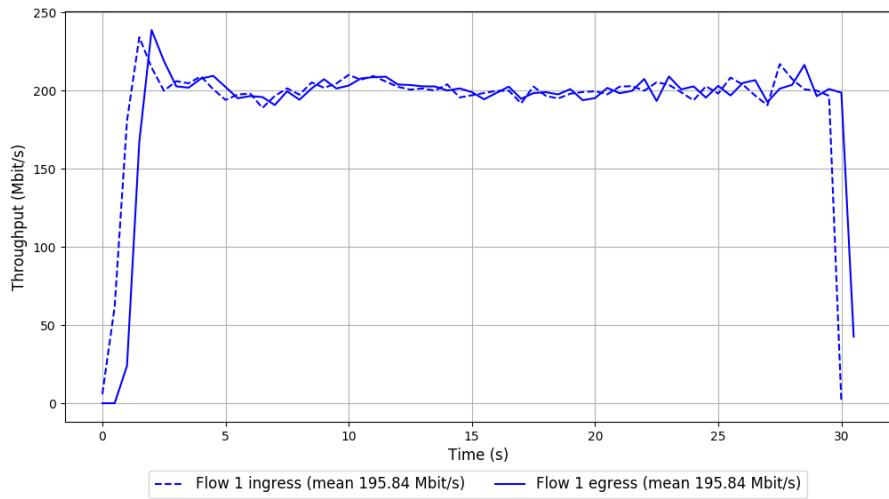


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-12-10 21:12:07
End at: 2018-12-10 21:12:37
Local clock offset: 18.199 ms
Remote clock offset: 20.906 ms

# Below is generated by plot.py at 2018-12-11 00:18:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 195.84 Mbit/s
95th percentile per-packet one-way delay: 110.413 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 195.84 Mbit/s
95th percentile per-packet one-way delay: 110.413 ms
Loss rate: 0.00%
```

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

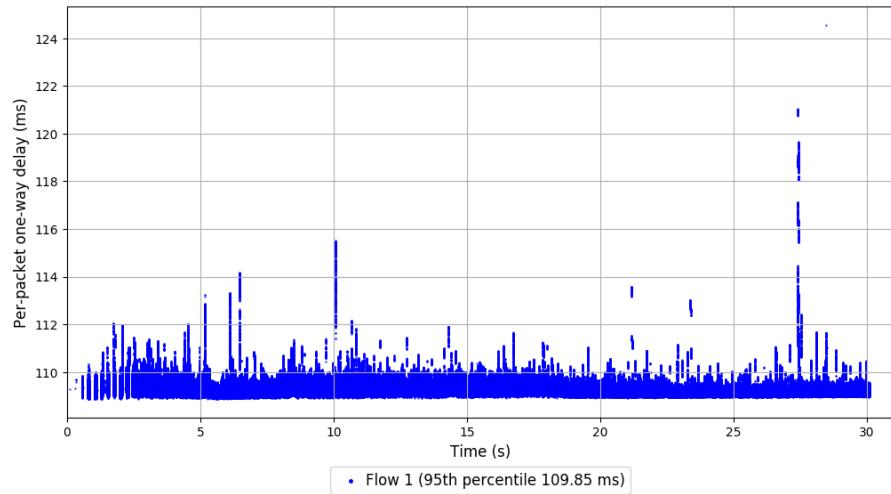
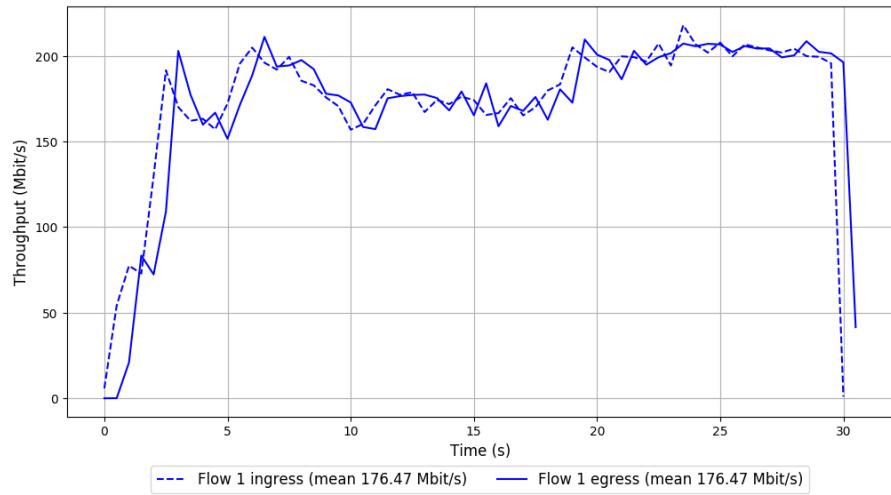


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-12-10 21:40:34
End at: 2018-12-10 21:41:04
Local clock offset: 21.347 ms
Remote clock offset: 22.897 ms

# Below is generated by plot.py at 2018-12-11 00:18:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 176.47 Mbit/s
95th percentile per-packet one-way delay: 109.850 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 176.47 Mbit/s
95th percentile per-packet one-way delay: 109.850 ms
Loss rate: 0.00%
```

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

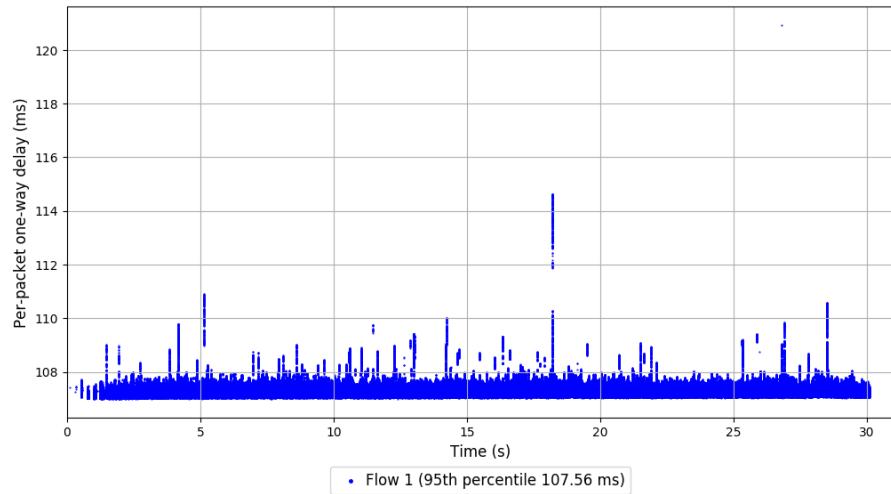
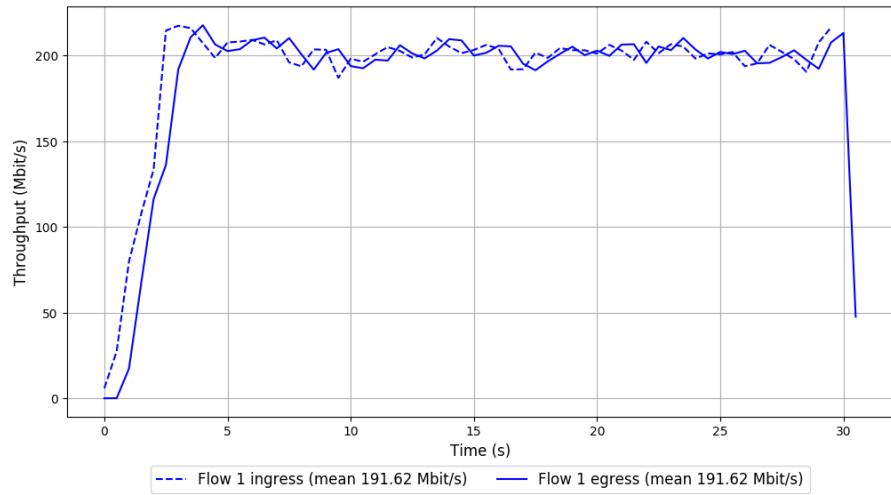


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-12-10 22:09:08
End at: 2018-12-10 22:09:38
Local clock offset: 10.893 ms
Remote clock offset: 10.446 ms

# Below is generated by plot.py at 2018-12-11 00:18:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 191.62 Mbit/s
95th percentile per-packet one-way delay: 107.559 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 191.62 Mbit/s
95th percentile per-packet one-way delay: 107.559 ms
Loss rate: 0.00%
```

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

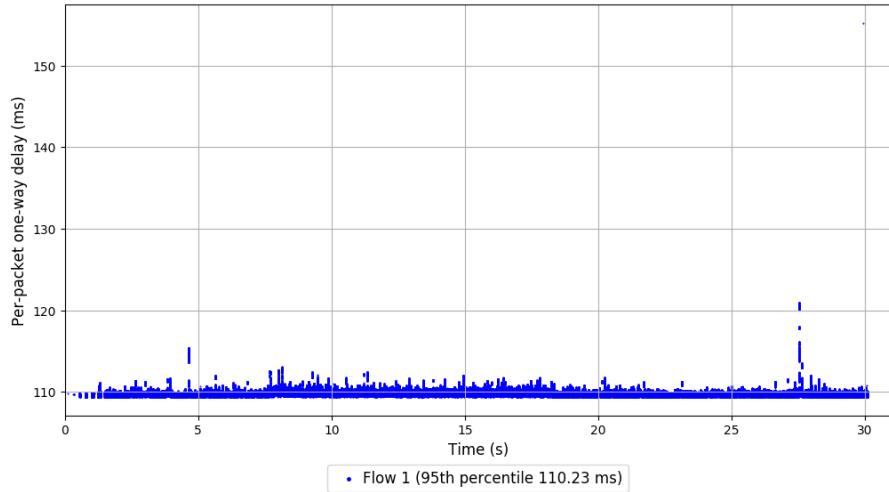
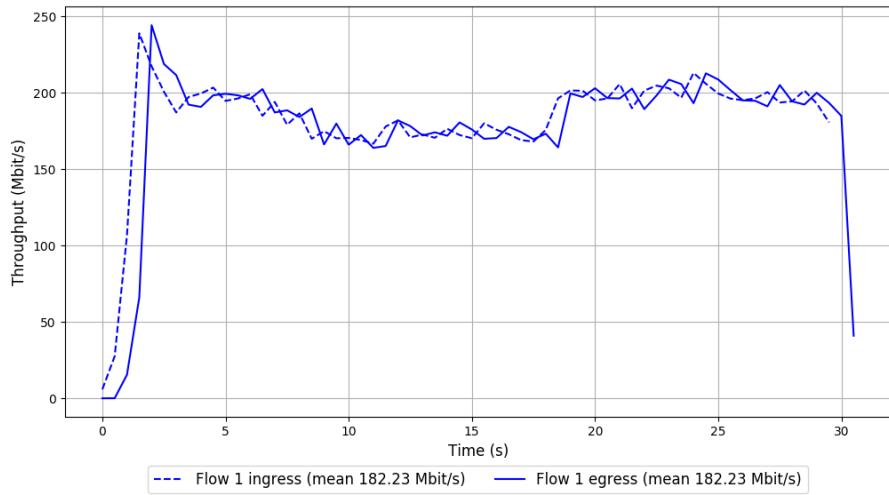


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-12-10 22:37:36
End at: 2018-12-10 22:38:06
Local clock offset: 3.987 ms
Remote clock offset: 4.455 ms

# Below is generated by plot.py at 2018-12-11 00:18:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 182.23 Mbit/s
95th percentile per-packet one-way delay: 110.232 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 182.23 Mbit/s
95th percentile per-packet one-way delay: 110.232 ms
Loss rate: 0.00%
```

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

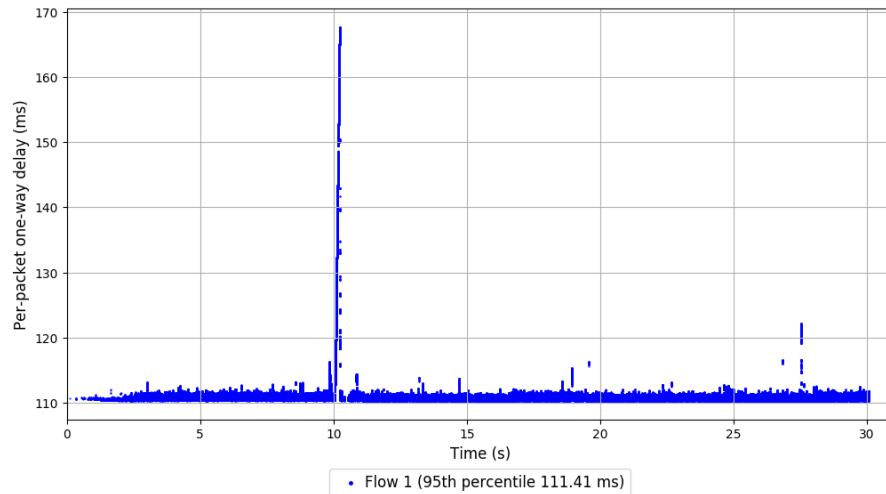
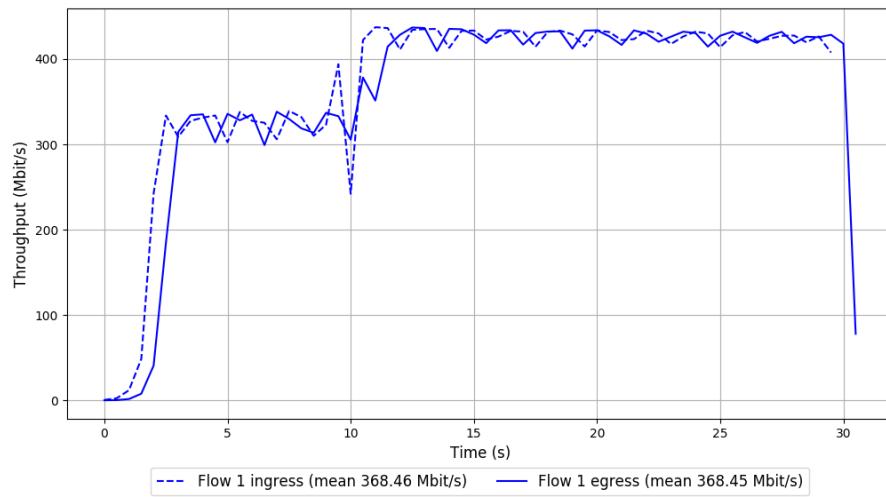


Run 1: Statistics of TCP Vegas

```
Start at: 2018-12-10 20:53:13
End at: 2018-12-10 20:53:43
Local clock offset: 14.625 ms
Remote clock offset: 17.237 ms

# Below is generated by plot.py at 2018-12-11 00:21:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 368.45 Mbit/s
95th percentile per-packet one-way delay: 111.408 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 368.45 Mbit/s
95th percentile per-packet one-way delay: 111.408 ms
Loss rate: 0.00%
```

Run 1: Report of TCP Vegas — Data Link

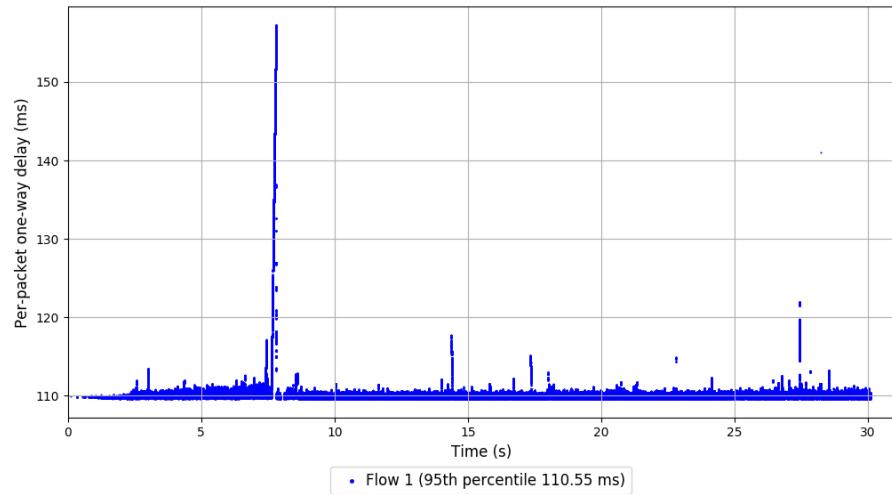
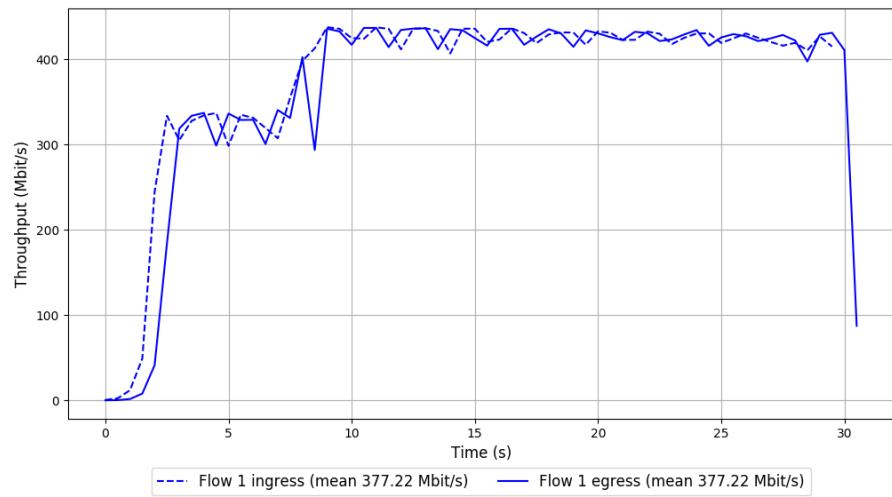


Run 2: Statistics of TCP Vegas

```
Start at: 2018-12-10 21:21:24
End at: 2018-12-10 21:21:54
Local clock offset: 24.26 ms
Remote clock offset: 27.2 ms

# Below is generated by plot.py at 2018-12-11 00:21:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 377.22 Mbit/s
95th percentile per-packet one-way delay: 110.551 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 377.22 Mbit/s
95th percentile per-packet one-way delay: 110.551 ms
Loss rate: 0.00%
```

Run 2: Report of TCP Vegas — Data Link

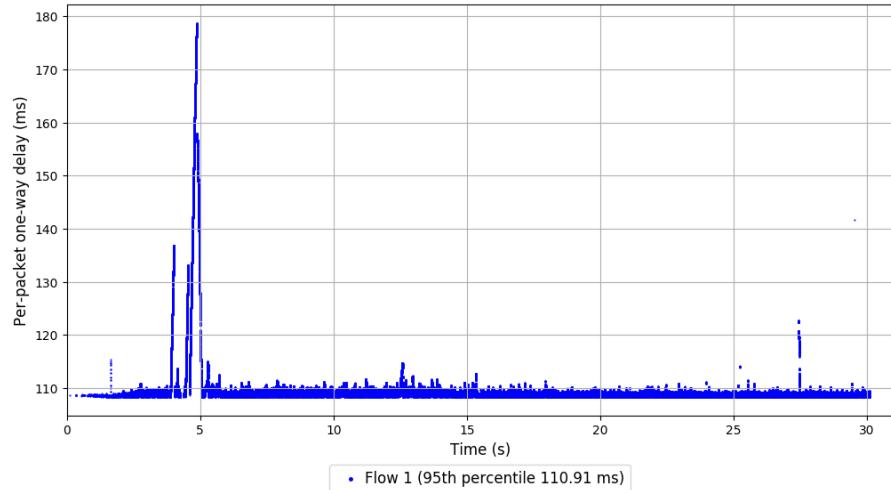
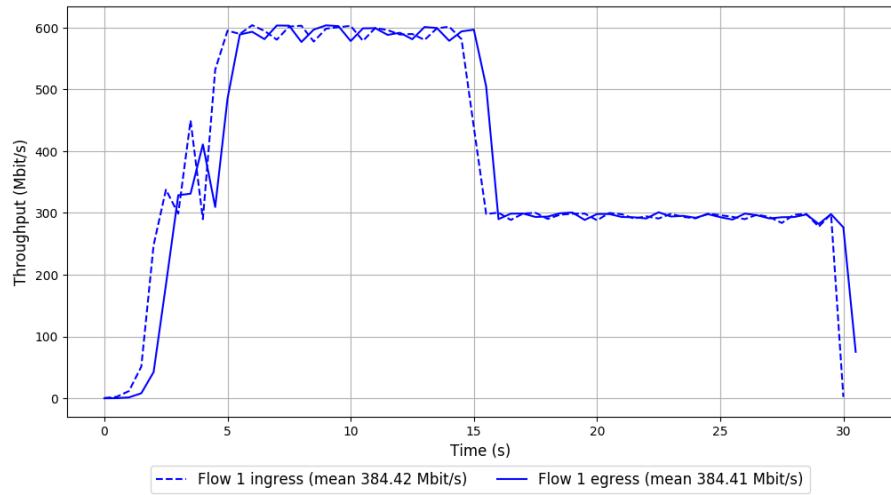


Run 3: Statistics of TCP Vegas

```
Start at: 2018-12-10 21:49:53
End at: 2018-12-10 21:50:23
Local clock offset: 10.388 ms
Remote clock offset: 11.39 ms

# Below is generated by plot.py at 2018-12-11 00:22:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 384.41 Mbit/s
95th percentile per-packet one-way delay: 110.908 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 384.41 Mbit/s
95th percentile per-packet one-way delay: 110.908 ms
Loss rate: 0.00%
```

Run 3: Report of TCP Vegas — Data Link

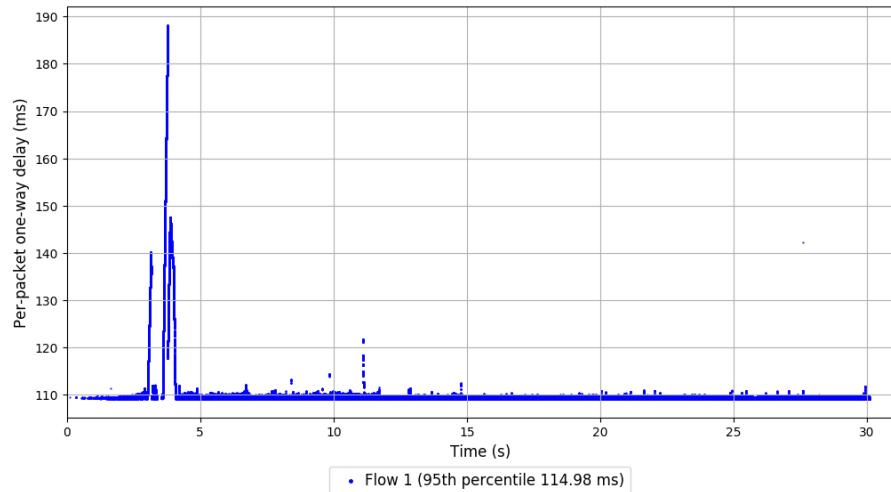
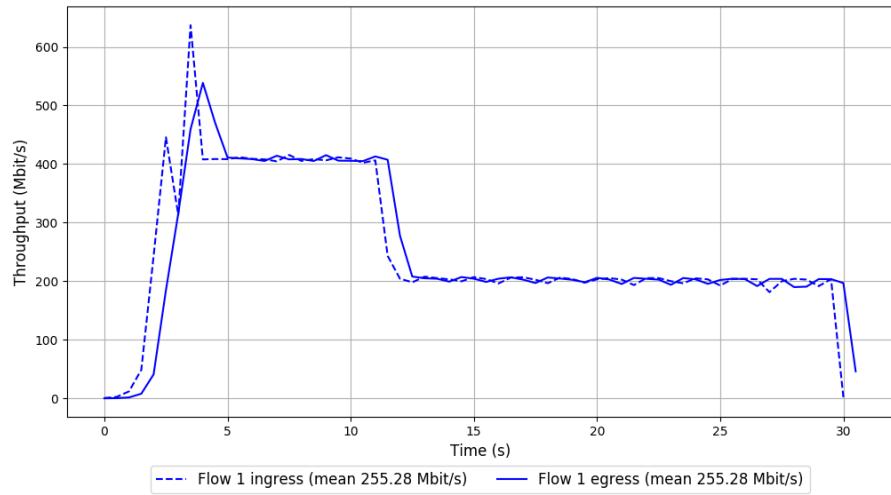


Run 4: Statistics of TCP Vegas

```
Start at: 2018-12-10 22:18:27
End at: 2018-12-10 22:18:57
Local clock offset: 4.393 ms
Remote clock offset: 4.649 ms

# Below is generated by plot.py at 2018-12-11 00:22:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 255.28 Mbit/s
95th percentile per-packet one-way delay: 114.983 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 255.28 Mbit/s
95th percentile per-packet one-way delay: 114.983 ms
Loss rate: 0.00%
```

Run 4: Report of TCP Vegas — Data Link

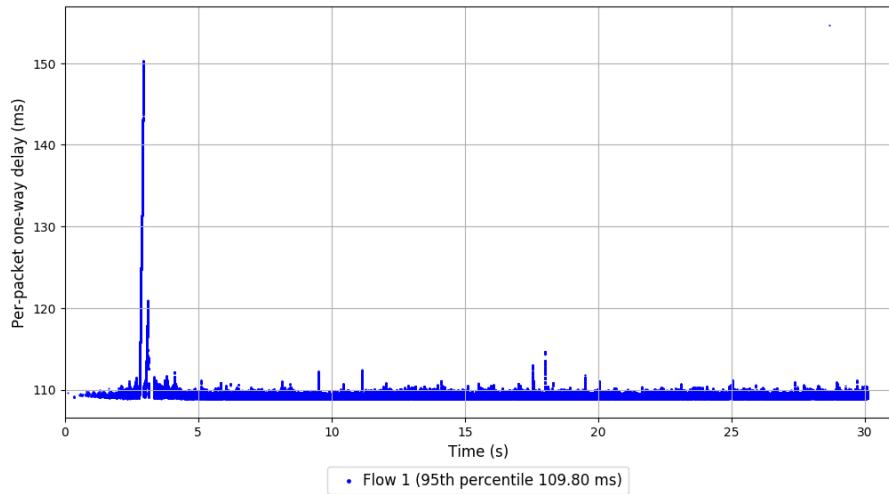
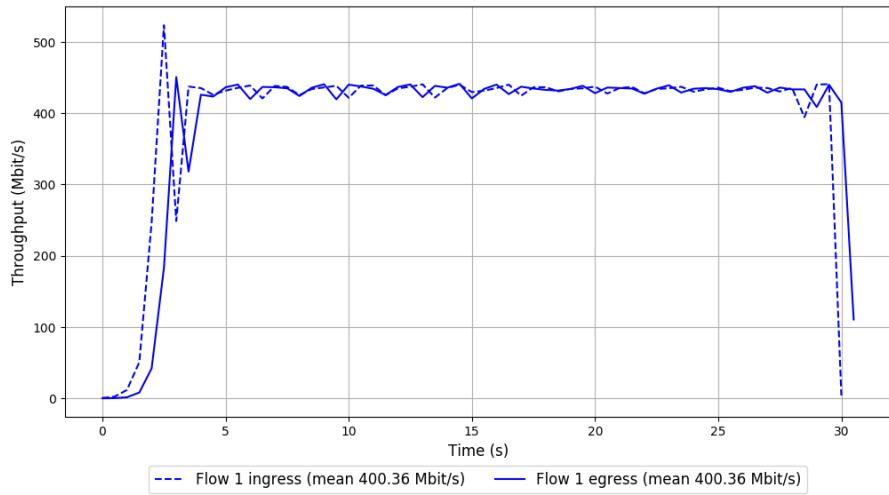


Run 5: Statistics of TCP Vegas

```
Start at: 2018-12-10 22:46:56
End at: 2018-12-10 22:47:26
Local clock offset: 3.174 ms
Remote clock offset: 3.123 ms

# Below is generated by plot.py at 2018-12-11 00:26:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 400.36 Mbit/s
95th percentile per-packet one-way delay: 109.803 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 400.36 Mbit/s
95th percentile per-packet one-way delay: 109.803 ms
Loss rate: 0.00%
```

Run 5: Report of TCP Vegas — Data Link

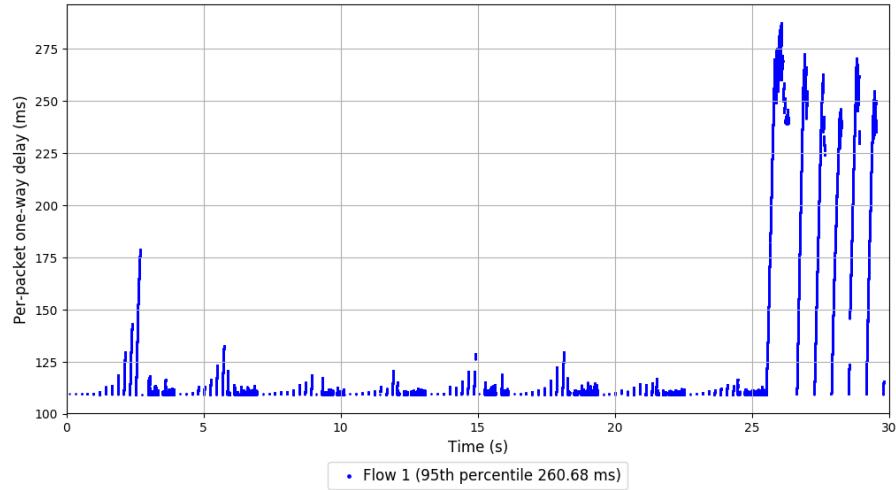
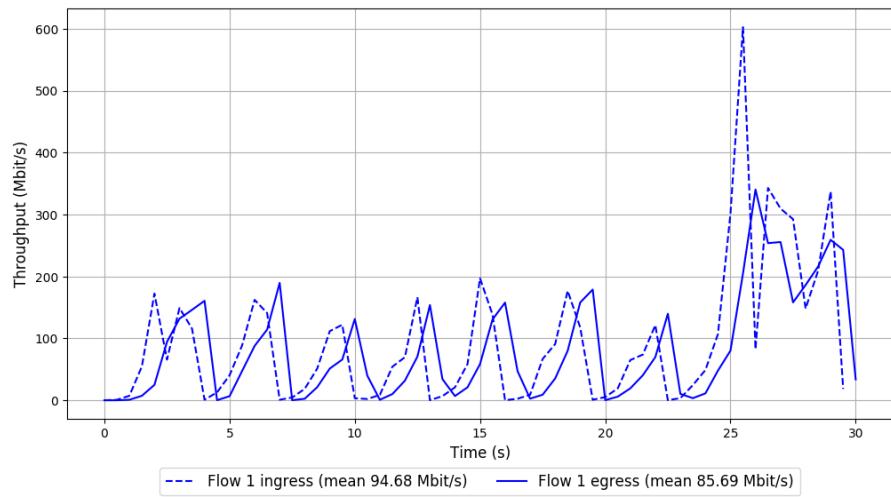


Run 1: Statistics of Verus

```
Start at: 2018-12-10 20:36:22
End at: 2018-12-10 20:36:52
Local clock offset: 8.937 ms
Remote clock offset: 9.633 ms

# Below is generated by plot.py at 2018-12-11 00:26:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.69 Mbit/s
95th percentile per-packet one-way delay: 260.682 ms
Loss rate: 9.50%
-- Flow 1:
Average throughput: 85.69 Mbit/s
95th percentile per-packet one-way delay: 260.682 ms
Loss rate: 9.50%
```

Run 1: Report of Verus — Data Link

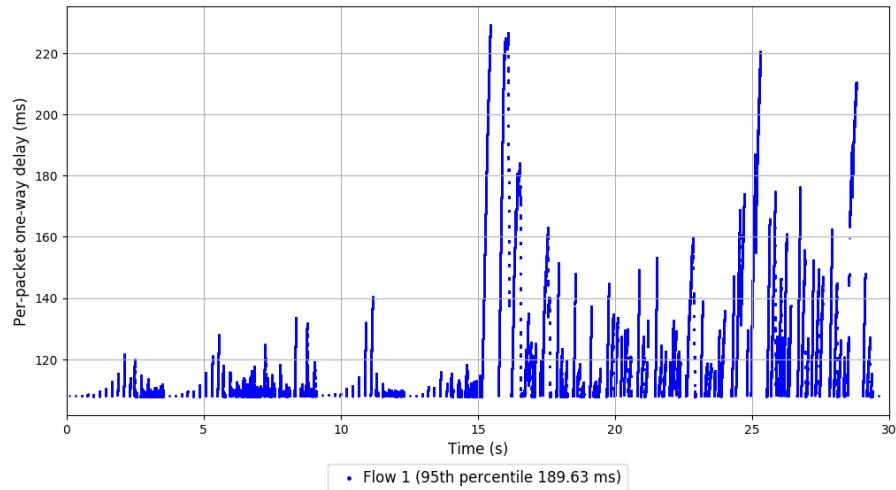
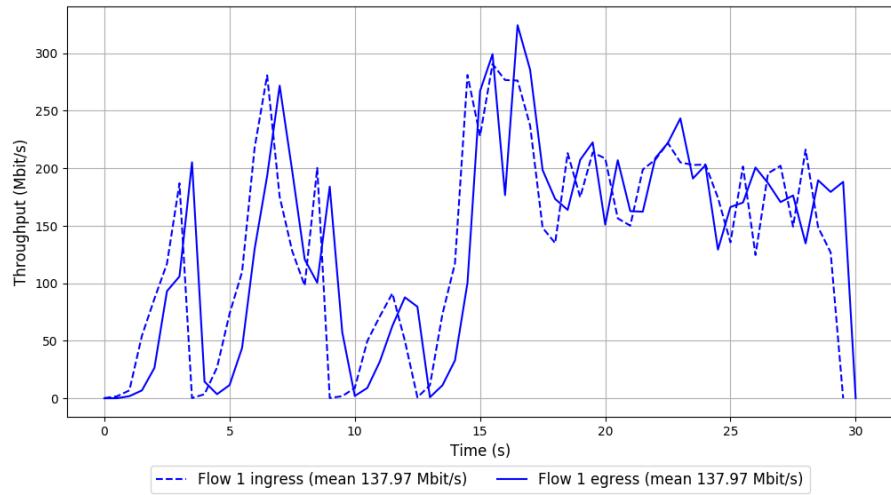


Run 2: Statistics of Verus

```
Start at: 2018-12-10 21:04:40
End at: 2018-12-10 21:05:10
Local clock offset: 20.551 ms
Remote clock offset: 22.075 ms

# Below is generated by plot.py at 2018-12-11 00:26:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 137.97 Mbit/s
95th percentile per-packet one-way delay: 189.627 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 137.97 Mbit/s
95th percentile per-packet one-way delay: 189.627 ms
Loss rate: 0.00%
```

Run 2: Report of Verus — Data Link

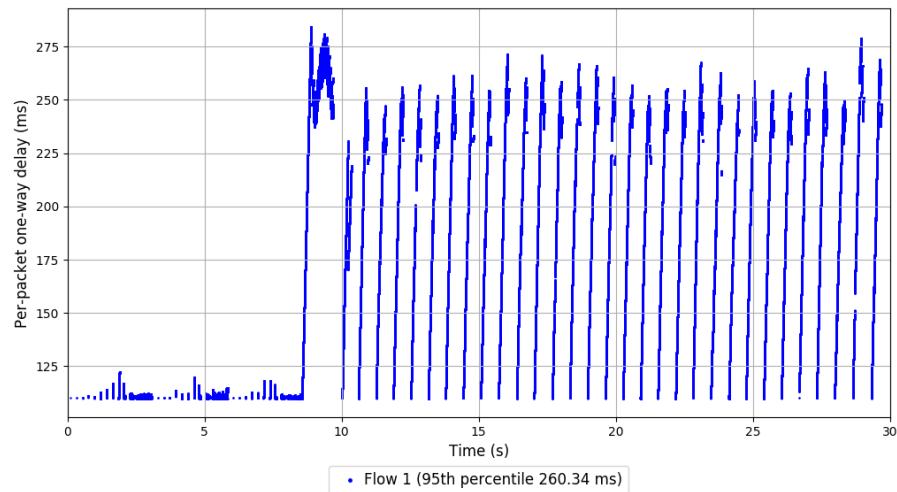
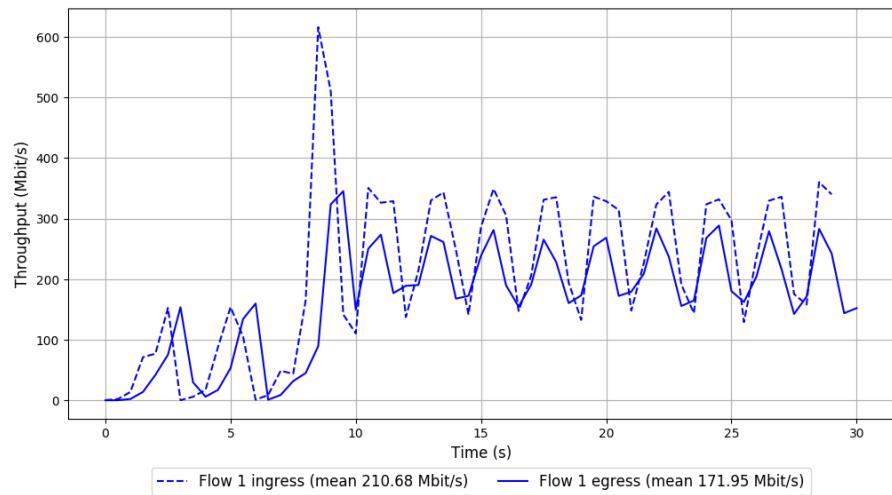


Run 3: Statistics of Verus

```
Start at: 2018-12-10 21:32:49
End at: 2018-12-10 21:33:19
Local clock offset: 35.173 ms
Remote clock offset: 39.064 ms

# Below is generated by plot.py at 2018-12-11 00:26:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 171.95 Mbit/s
95th percentile per-packet one-way delay: 260.336 ms
Loss rate: 18.02%
-- Flow 1:
Average throughput: 171.95 Mbit/s
95th percentile per-packet one-way delay: 260.336 ms
Loss rate: 18.02%
```

Run 3: Report of Verus — Data Link

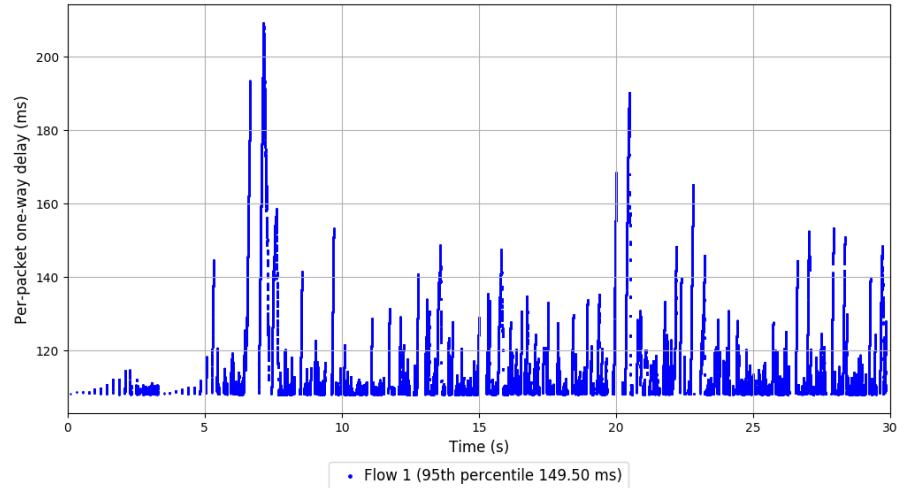
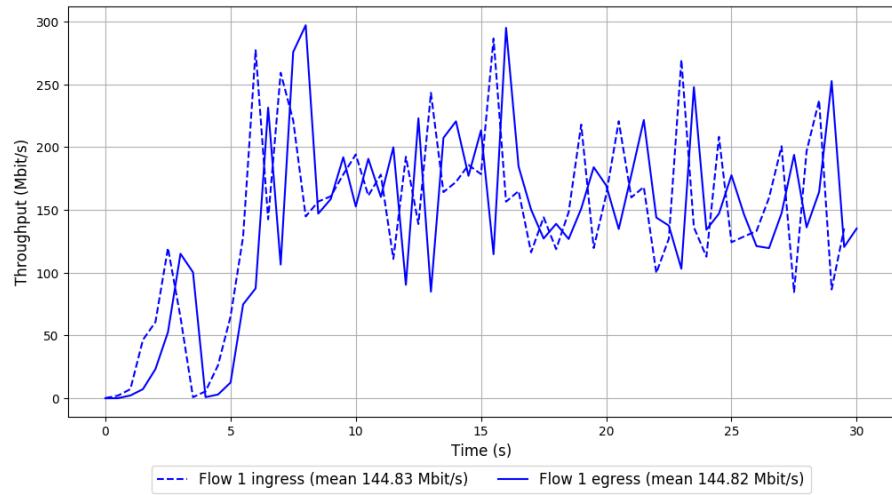


Run 4: Statistics of Verus

```
Start at: 2018-12-10 22:01:29
End at: 2018-12-10 22:01:59
Local clock offset: 8.827 ms
Remote clock offset: 9.415 ms

# Below is generated by plot.py at 2018-12-11 00:26:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 144.82 Mbit/s
95th percentile per-packet one-way delay: 149.500 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 144.82 Mbit/s
95th percentile per-packet one-way delay: 149.500 ms
Loss rate: 0.00%
```

Run 4: Report of Verus — Data Link

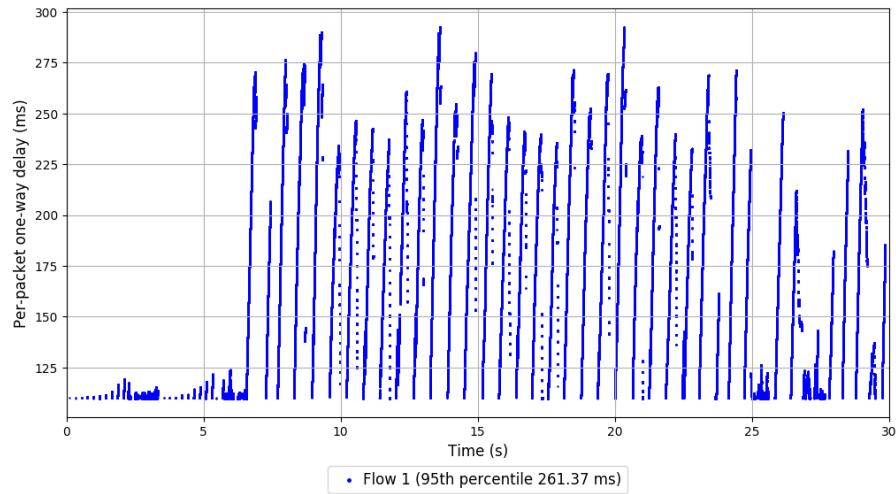
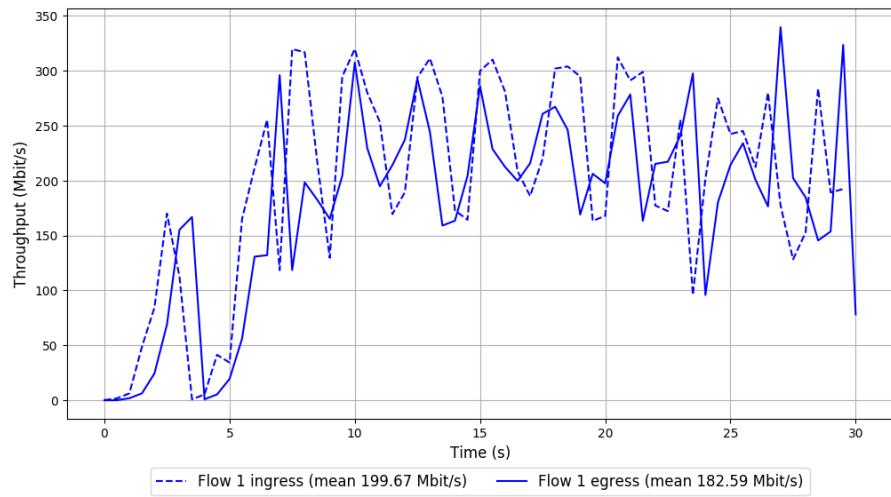


Run 5: Statistics of Verus

```
Start at: 2018-12-10 22:29:55
End at: 2018-12-10 22:30:25
Local clock offset: 2.556 ms
Remote clock offset: 3.603 ms

# Below is generated by plot.py at 2018-12-11 00:27:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 182.59 Mbit/s
95th percentile per-packet one-way delay: 261.367 ms
Loss rate: 8.55%
-- Flow 1:
Average throughput: 182.59 Mbit/s
95th percentile per-packet one-way delay: 261.367 ms
Loss rate: 8.55%
```

Run 5: Report of Verus — Data Link



```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-12-10 20:54:43
```

```
End at: 2018-12-10 20:55:13
```

```
Local clock offset: 18.151 ms
```

```
Remote clock offset: 18.958 ms
```

```
# Below is generated by plot.py at 2018-12-11 00:27:59
```

```
# Datalink statistics
```

```
-- Total of 1 flow:
```

```
Average throughput: 262.30 Mbit/s
```

```
95th percentile per-packet one-way delay: 108.813 ms
```

```
Loss rate: 0.00%
```

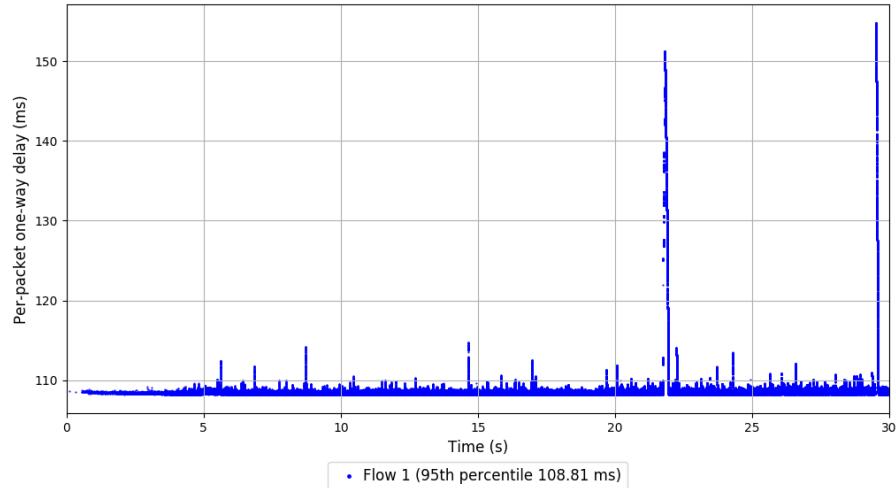
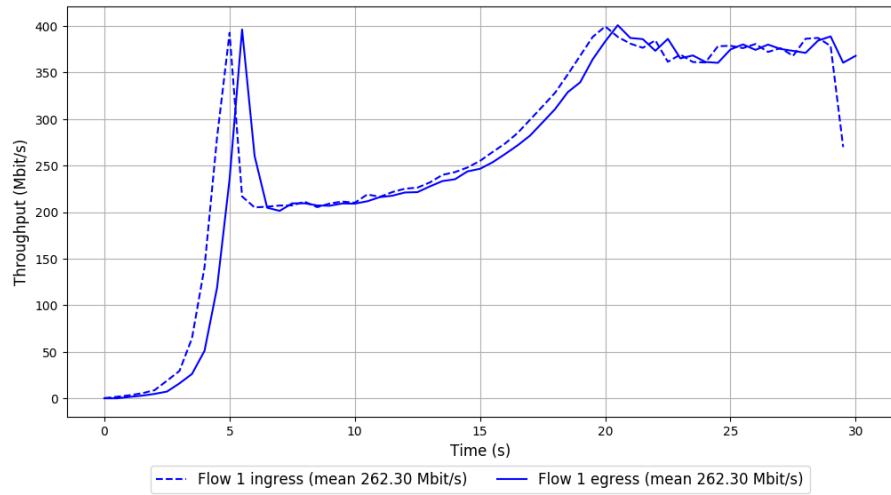
```
-- Flow 1:
```

```
Average throughput: 262.30 Mbit/s
```

```
95th percentile per-packet one-way delay: 108.813 ms
```

```
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

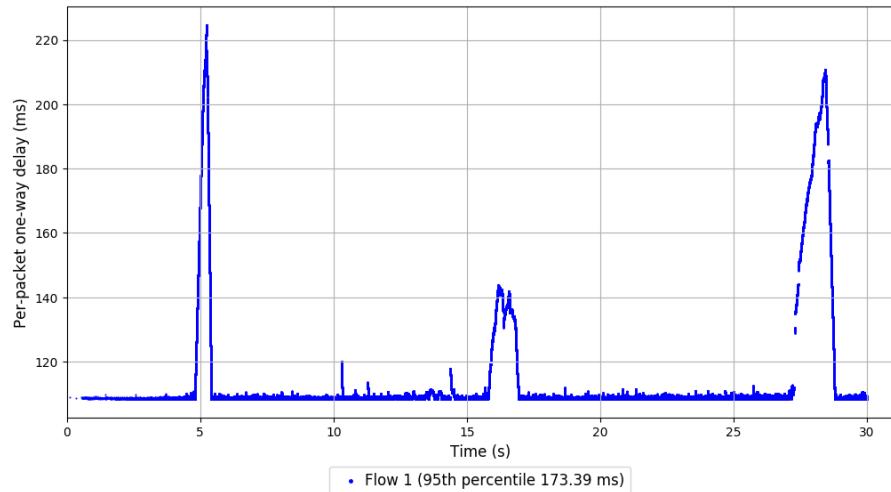
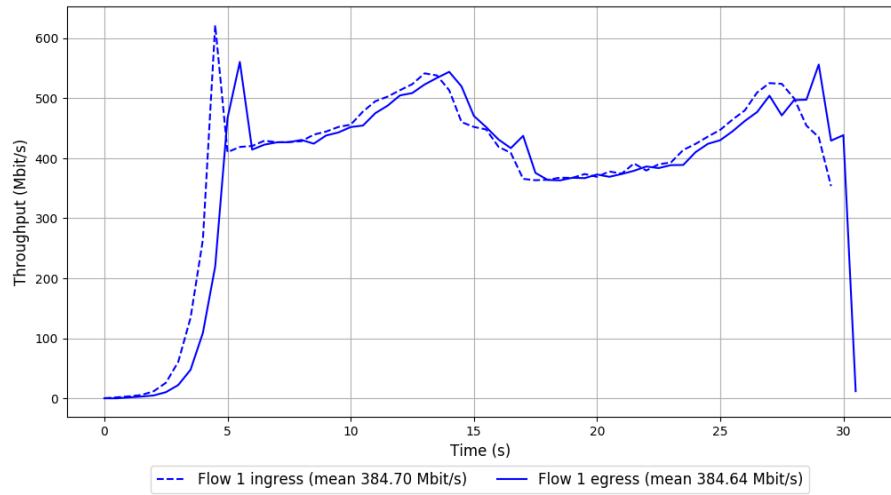


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-12-10 21:22:55
End at: 2018-12-10 21:23:25
Local clock offset: 25.642 ms
Remote clock offset: 28.678 ms

# Below is generated by plot.py at 2018-12-11 00:28:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 384.64 Mbit/s
95th percentile per-packet one-way delay: 173.391 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 384.64 Mbit/s
95th percentile per-packet one-way delay: 173.391 ms
Loss rate: 0.02%
```

Run 2: Report of PCC-Vivace — Data Link

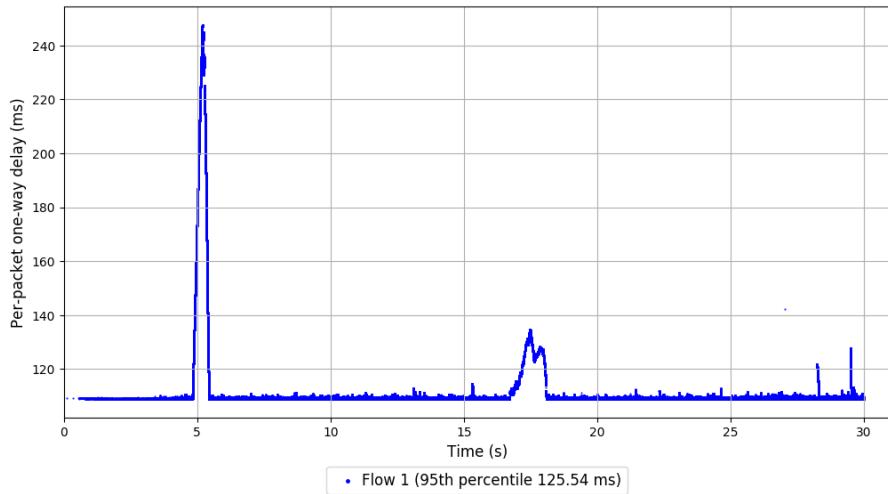
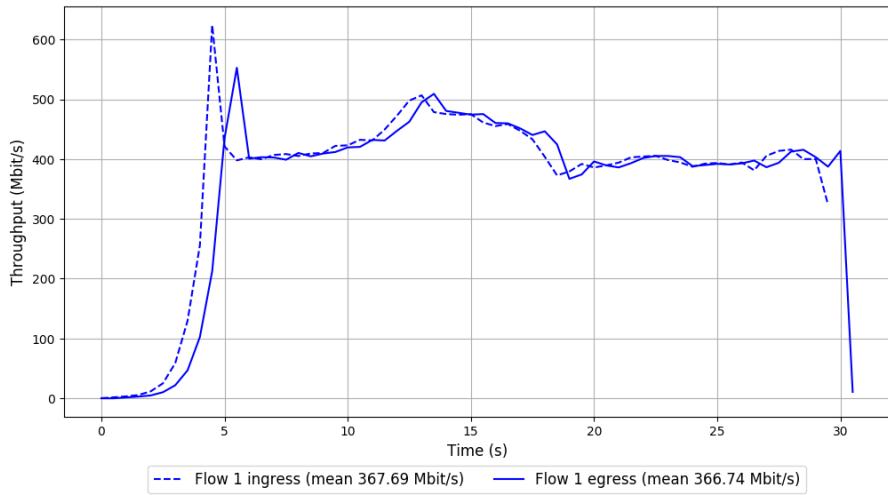


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-12-10 21:51:23
End at: 2018-12-10 21:51:53
Local clock offset: 9.863 ms
Remote clock offset: 10.584 ms

# Below is generated by plot.py at 2018-12-11 00:28:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 366.74 Mbit/s
95th percentile per-packet one-way delay: 125.537 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 366.74 Mbit/s
95th percentile per-packet one-way delay: 125.537 ms
Loss rate: 0.26%
```

Run 3: Report of PCC-Vivace — Data Link

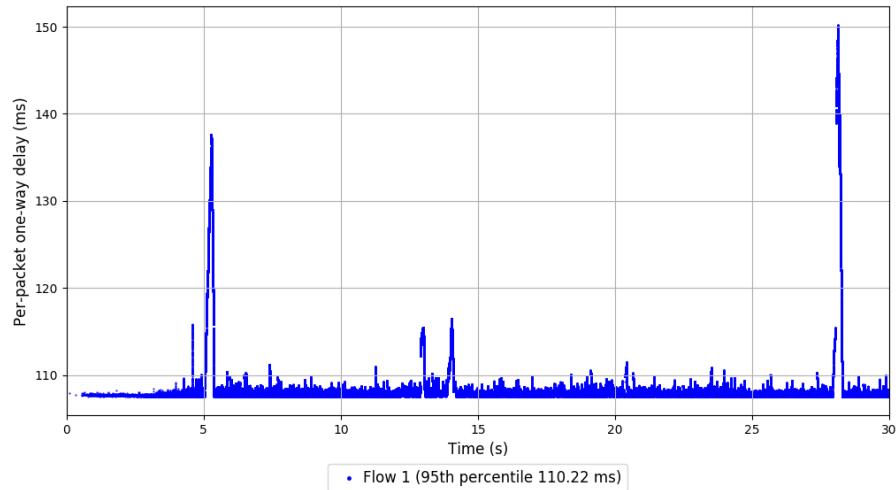
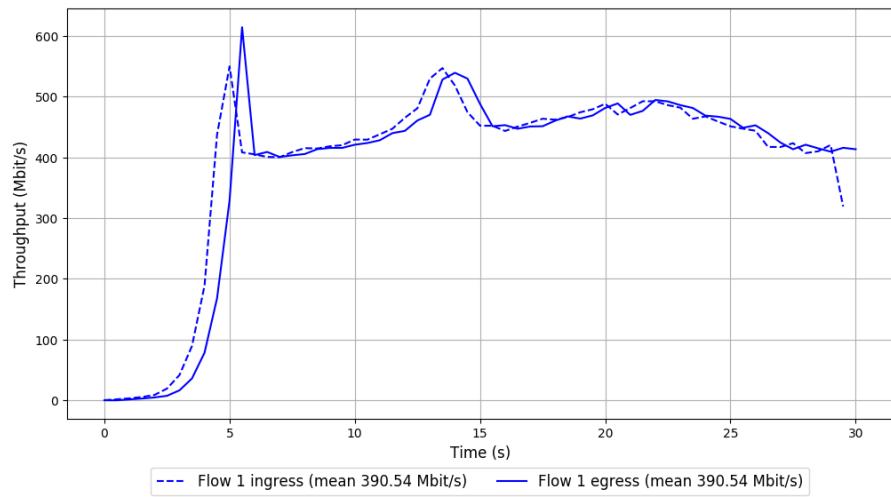


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-12-10 22:19:52
End at: 2018-12-10 22:20:22
Local clock offset: 4.699 ms
Remote clock offset: 4.307 ms

# Below is generated by plot.py at 2018-12-11 00:28:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 390.54 Mbit/s
95th percentile per-packet one-way delay: 110.220 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 390.54 Mbit/s
95th percentile per-packet one-way delay: 110.220 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

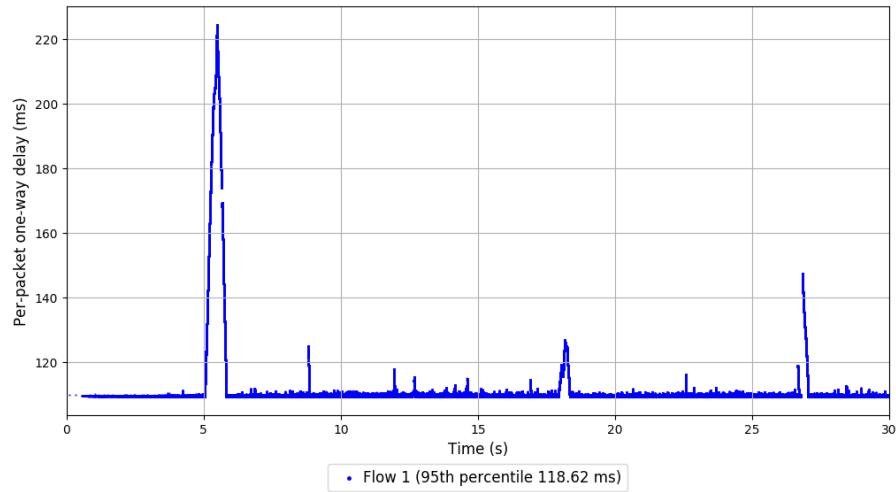
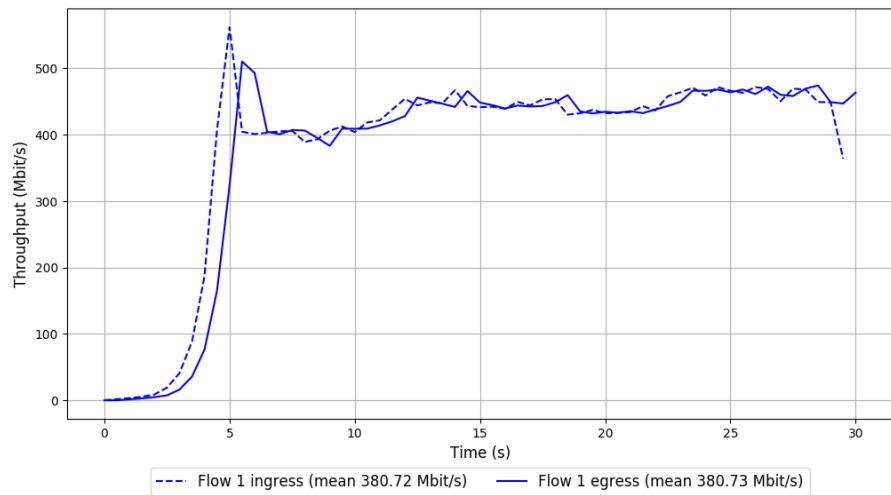


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-12-10 22:48:29
End at: 2018-12-10 22:48:59
Local clock offset: 2.666 ms
Remote clock offset: 2.773 ms

# Below is generated by plot.py at 2018-12-11 00:28:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 380.73 Mbit/s
95th percentile per-packet one-way delay: 118.616 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 380.73 Mbit/s
95th percentile per-packet one-way delay: 118.616 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link

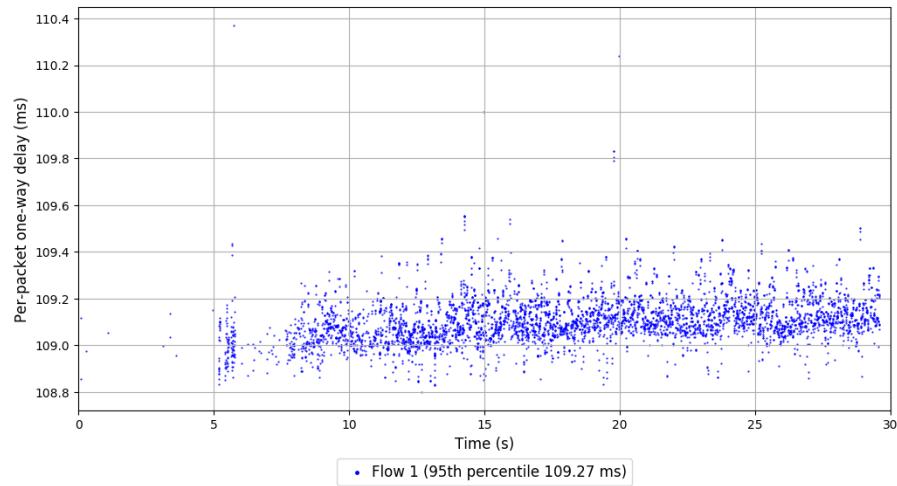
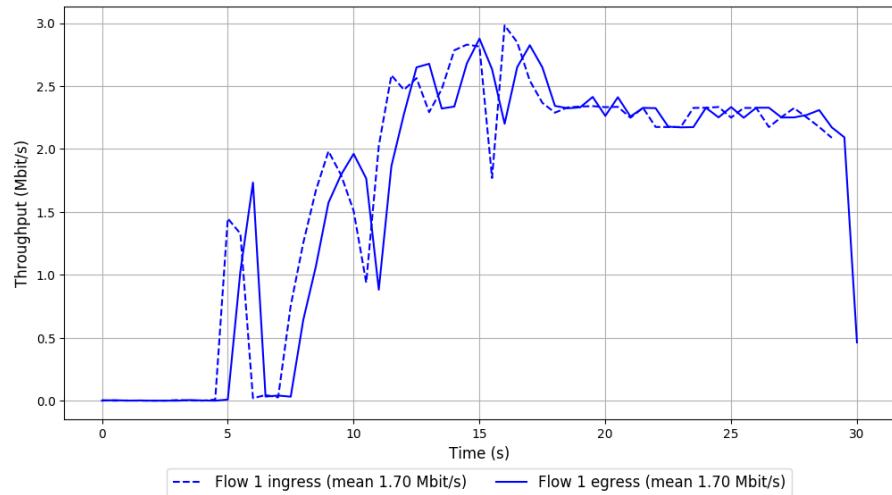


Run 1: Statistics of WebRTC media

```
Start at: 2018-12-10 20:35:12
End at: 2018-12-10 20:35:42
Local clock offset: 10.306 ms
Remote clock offset: 11.82 ms

# Below is generated by plot.py at 2018-12-11 00:28:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 109.272 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 109.272 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

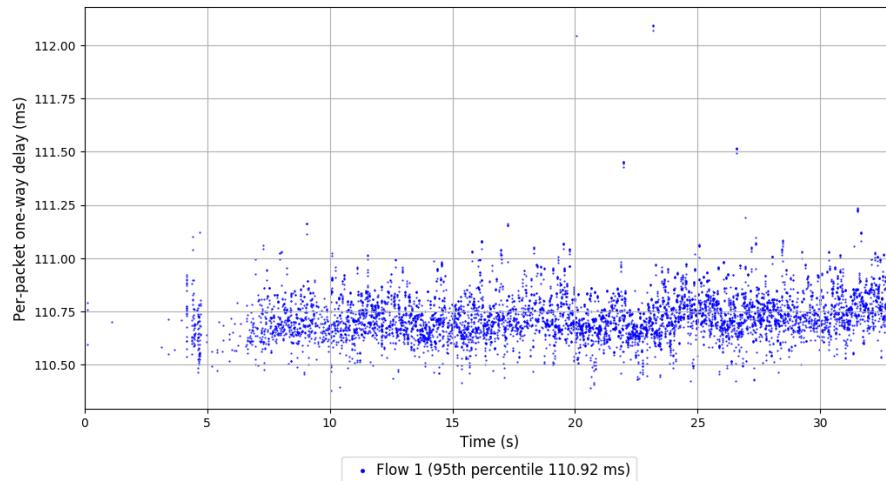
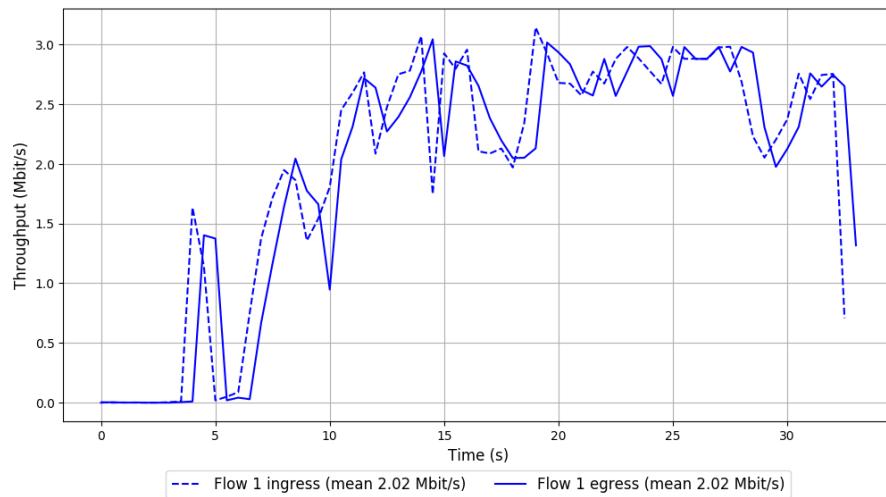


Run 2: Statistics of WebRTC media

```
Start at: 2018-12-10 21:03:30
End at: 2018-12-10 21:04:00
Local clock offset: 20.082 ms
Remote clock offset: 23.221 ms

# Below is generated by plot.py at 2018-12-11 00:28:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 110.918 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 110.918 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

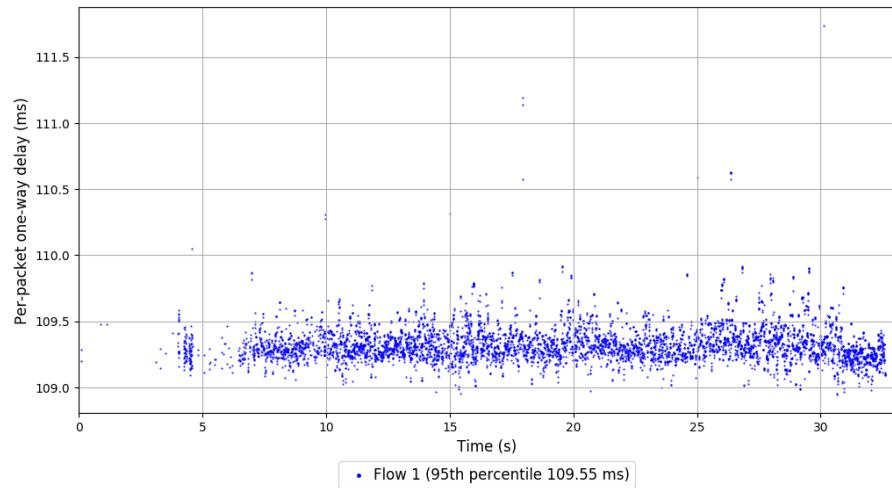
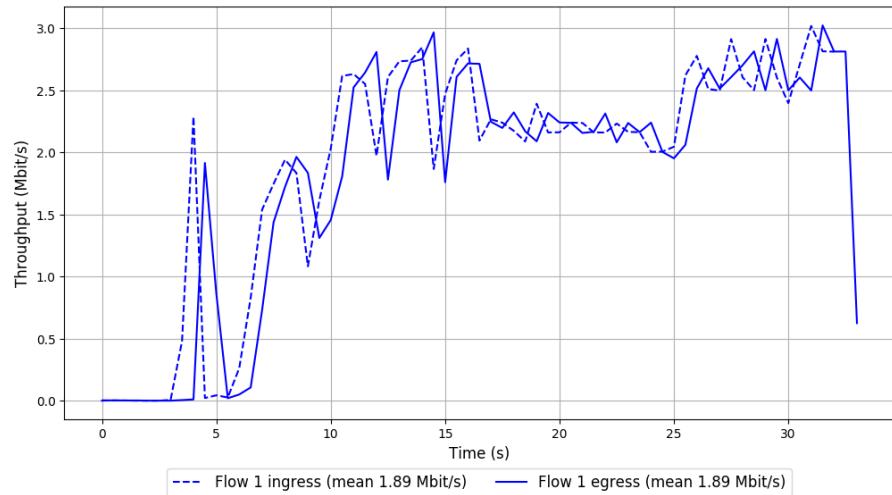


Run 3: Statistics of WebRTC media

```
Start at: 2018-12-10 21:31:39
End at: 2018-12-10 21:32:09
Local clock offset: 34.155 ms
Remote clock offset: 37.732 ms

# Below is generated by plot.py at 2018-12-11 00:28:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 109.551 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 109.551 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

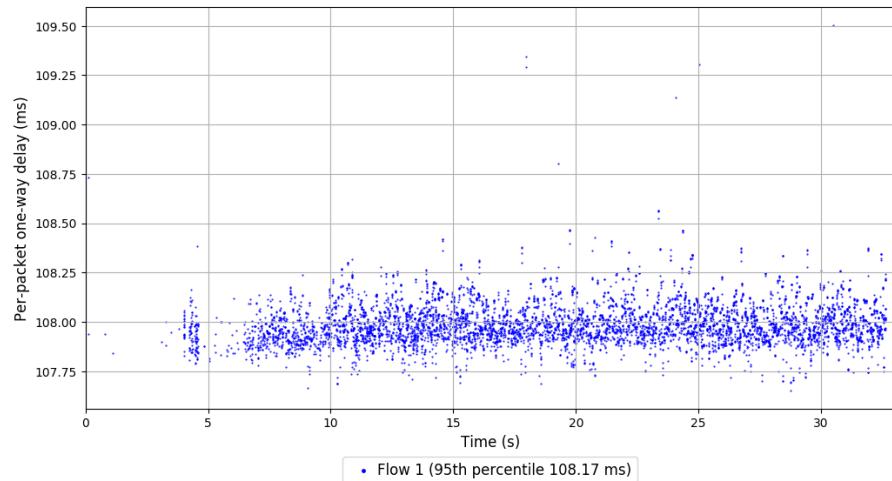
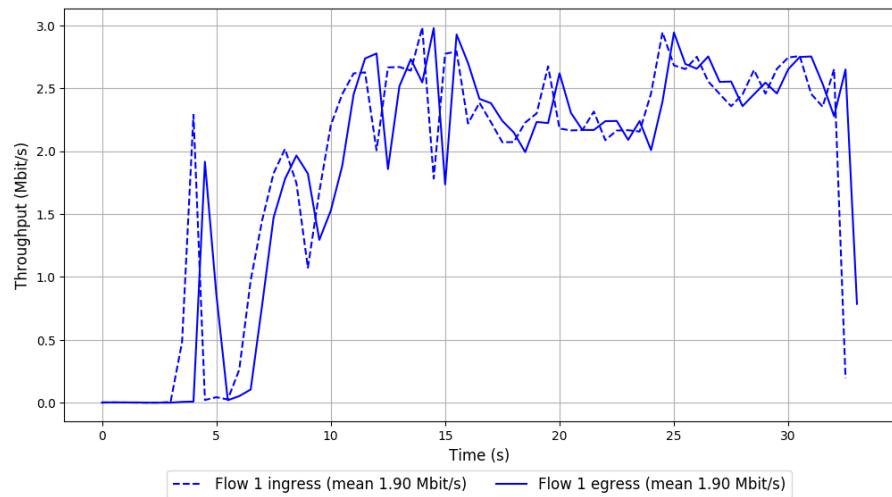


Run 4: Statistics of WebRTC media

```
Start at: 2018-12-10 22:00:19
End at: 2018-12-10 22:00:49
Local clock offset: 9.821 ms
Remote clock offset: 8.955 ms

# Below is generated by plot.py at 2018-12-11 00:28:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 108.169 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 108.169 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-12-10 22:28:45
End at: 2018-12-10 22:29:15
Local clock offset: 3.336 ms
Remote clock offset: 3.576 ms

# Below is generated by plot.py at 2018-12-11 00:28:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 109.598 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 109.598 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link

