

Pantheon Report

Generated at 2018-10-02 10:42:57 (UTC).
Data path: GCE Tokyo on `ens4` (*local*) → GCE London on `ens4` (*remote*).
Repeated the test of 18 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:

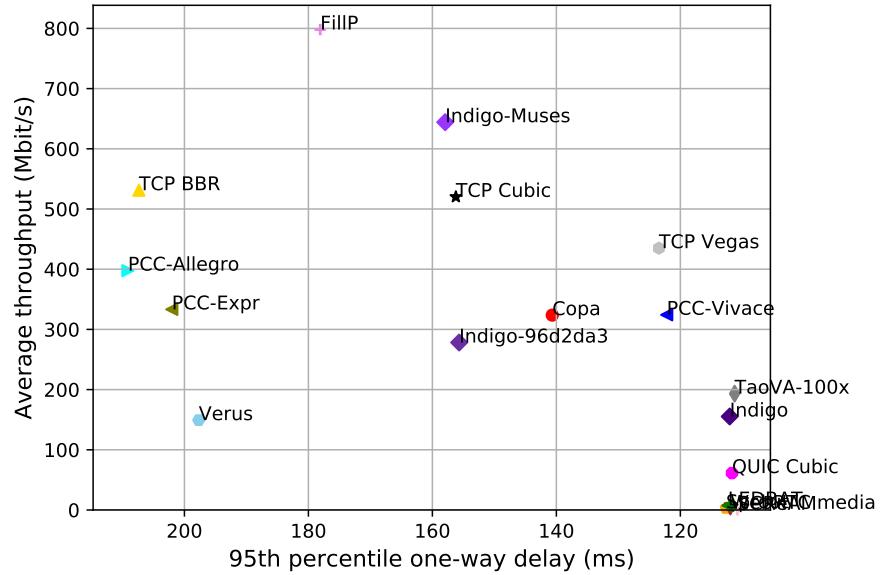
```
Linux 4.15.0-1019-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

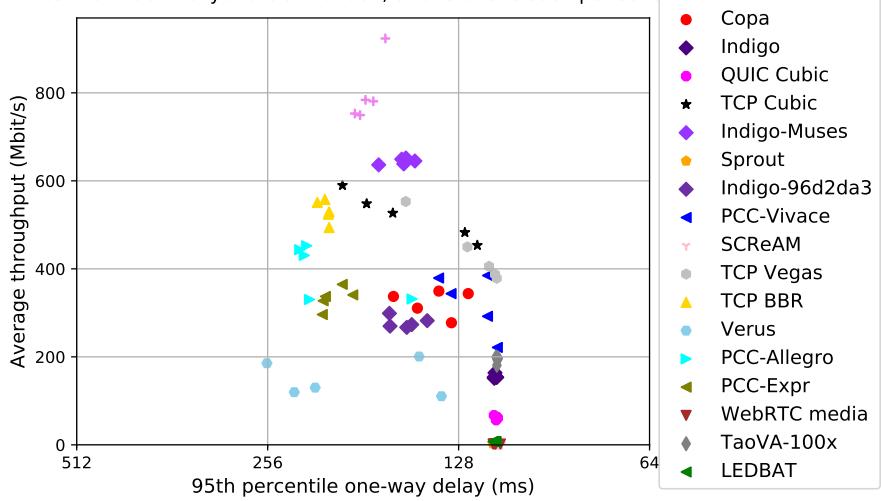
```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbfed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
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



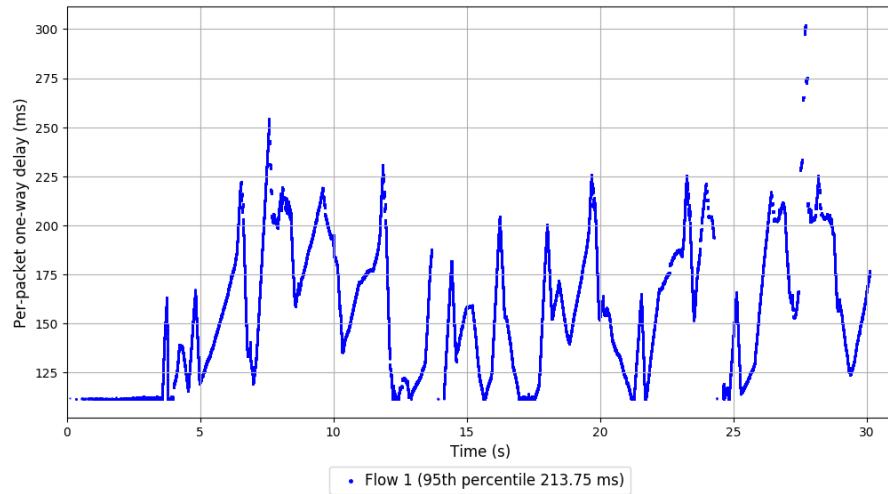
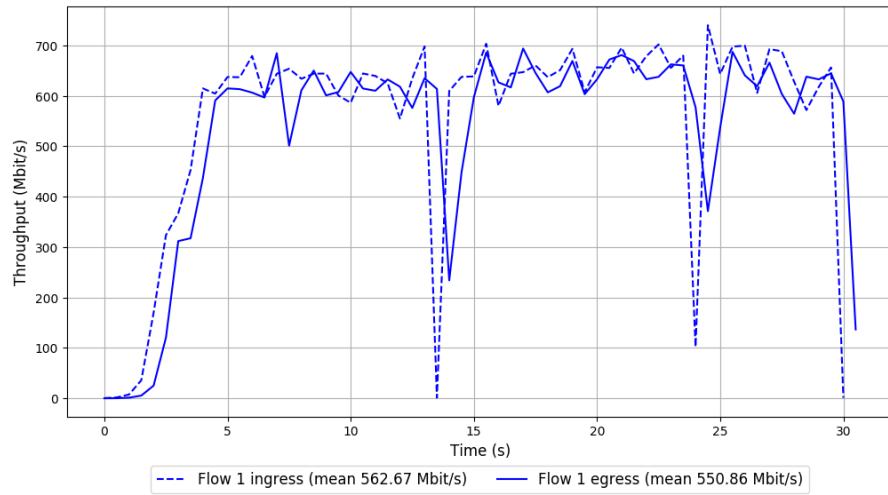
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	531.22	207.34	1.23
Copa	5	323.70	140.66	0.00
TCP Cubic	5	520.14	156.22	0.07
FillP	5	798.12	178.09	3.40
Indigo	5	155.31	112.04	0.00
Indigo-96d2da3	5	278.21	155.68	0.13
LEDBAT	5	7.58	112.33	0.00
Indigo-Muses	5	644.19	157.93	0.12
PCC-Allegro	5	397.60	209.12	2.90
PCC-Expr	5	333.22	202.04	3.09
QUIC Cubic	5	61.32	111.67	0.00
SCReAM	5	0.22	110.79	0.00
Sprout	5	2.97	112.63	0.00
TaoVA-100x	5	193.26	111.25	0.00
TCP Vegas	5	434.93	123.46	0.07
Verus	5	149.28	197.69	2.53
PCC-Vivace	5	324.22	122.20	0.11
WebRTC media	5	1.91	111.93	0.00

Run 1: Statistics of TCP BBR

```
Start at: 2018-10-02 07:30:34
End at: 2018-10-02 07:31:04
Local clock offset: -0.208 ms
Remote clock offset: -0.123 ms

# Below is generated by plot.py at 2018-10-02 09:39:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 550.86 Mbit/s
95th percentile per-packet one-way delay: 213.755 ms
Loss rate: 2.10%
-- Flow 1:
Average throughput: 550.86 Mbit/s
95th percentile per-packet one-way delay: 213.755 ms
Loss rate: 2.10%
```

Run 1: Report of TCP BBR — Data Link

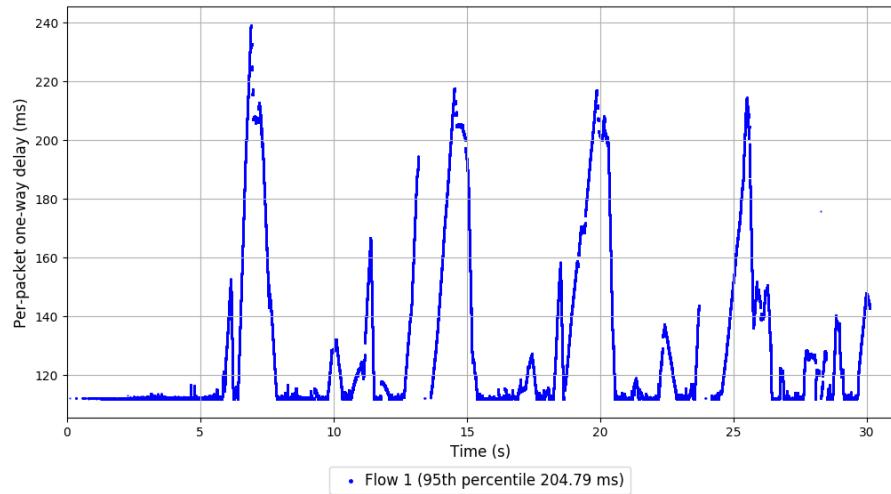
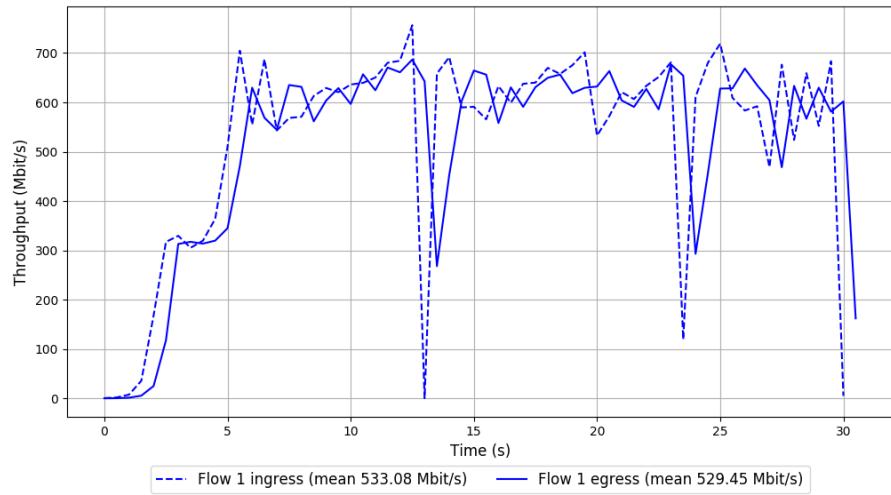


Run 2: Statistics of TCP BBR

```
Start at: 2018-10-02 07:56:33
End at: 2018-10-02 07:57:03
Local clock offset: -0.254 ms
Remote clock offset: -0.147 ms

# Below is generated by plot.py at 2018-10-02 09:39:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 529.45 Mbit/s
95th percentile per-packet one-way delay: 204.793 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 529.45 Mbit/s
95th percentile per-packet one-way delay: 204.793 ms
Loss rate: 0.68%
```

Run 2: Report of TCP BBR — Data Link

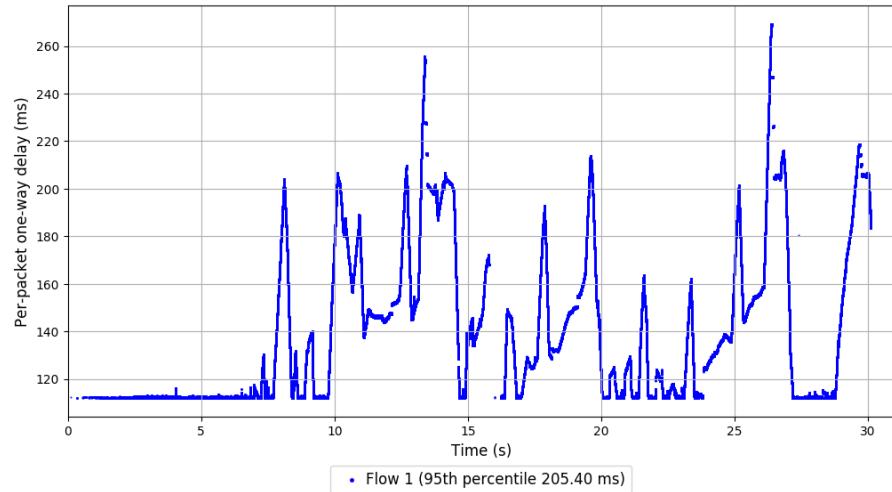
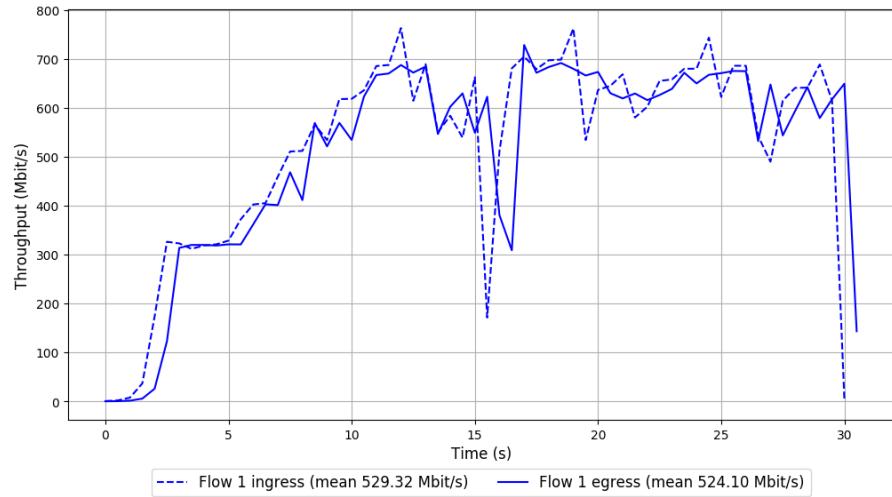


Run 3: Statistics of TCP BBR

```
Start at: 2018-10-02 08:23:08
End at: 2018-10-02 08:23:38
Local clock offset: -0.71 ms
Remote clock offset: 0.244 ms

# Below is generated by plot.py at 2018-10-02 09:39:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 524.10 Mbit/s
95th percentile per-packet one-way delay: 205.398 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 524.10 Mbit/s
95th percentile per-packet one-way delay: 205.398 ms
Loss rate: 0.99%
```

Run 3: Report of TCP BBR — Data Link

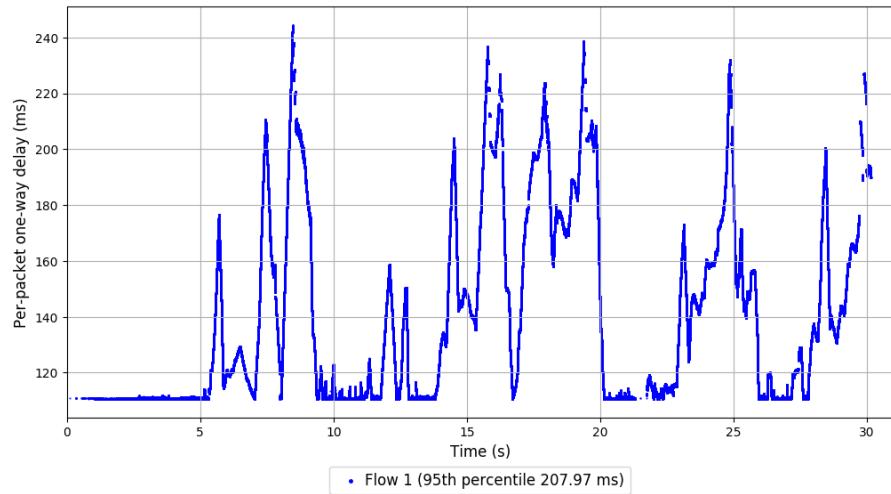
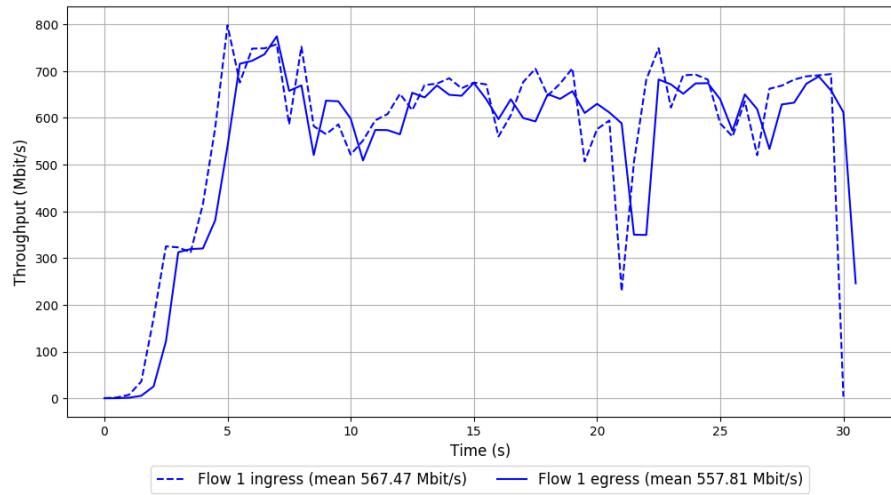


Run 4: Statistics of TCP BBR

```
Start at: 2018-10-02 08:49:40
End at: 2018-10-02 08:50:10
Local clock offset: -0.012 ms
Remote clock offset: -0.382 ms

# Below is generated by plot.py at 2018-10-02 09:40:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 557.81 Mbit/s
95th percentile per-packet one-way delay: 207.969 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 557.81 Mbit/s
95th percentile per-packet one-way delay: 207.969 ms
Loss rate: 1.57%
```

Run 4: Report of TCP BBR — Data Link

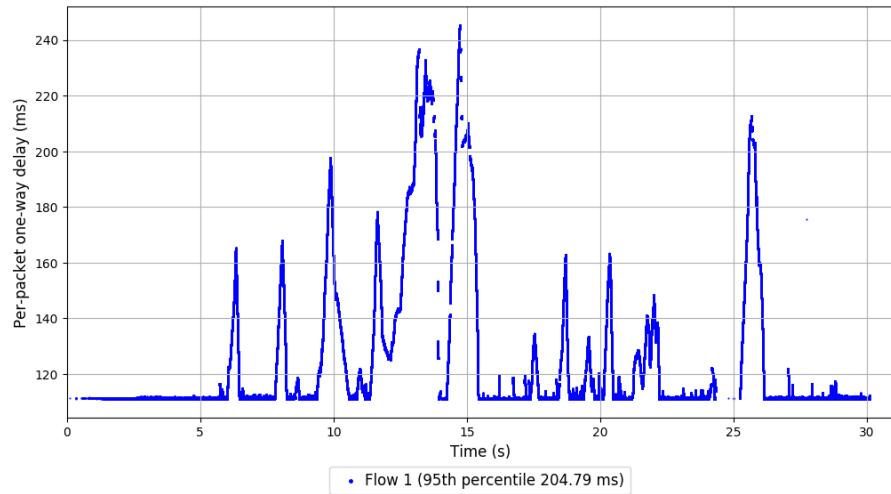
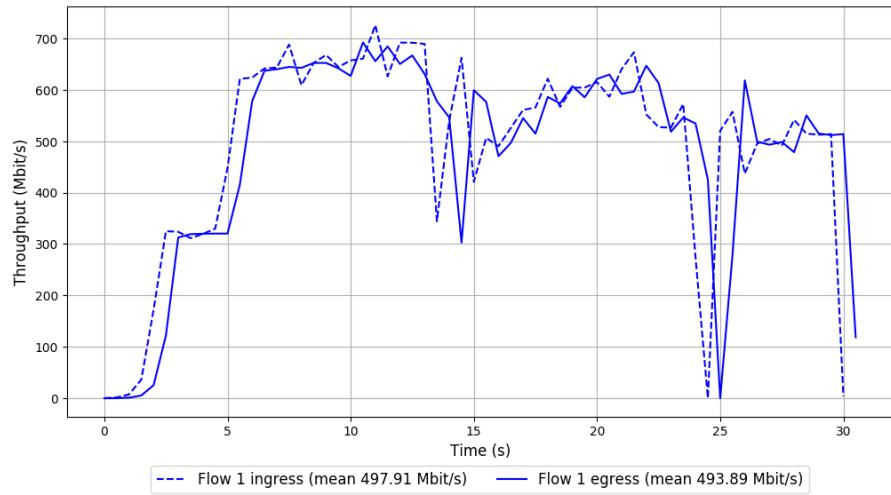


Run 5: Statistics of TCP BBR

```
Start at: 2018-10-02 09:15:51
End at: 2018-10-02 09:16:21
Local clock offset: -0.305 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2018-10-02 09:40:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 493.89 Mbit/s
95th percentile per-packet one-way delay: 204.786 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 493.89 Mbit/s
95th percentile per-packet one-way delay: 204.786 ms
Loss rate: 0.81%
```

Run 5: Report of TCP BBR — Data Link

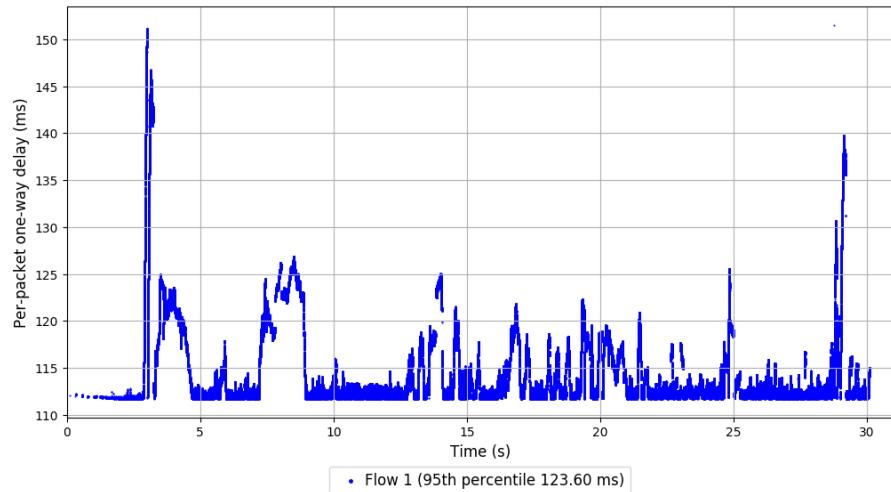
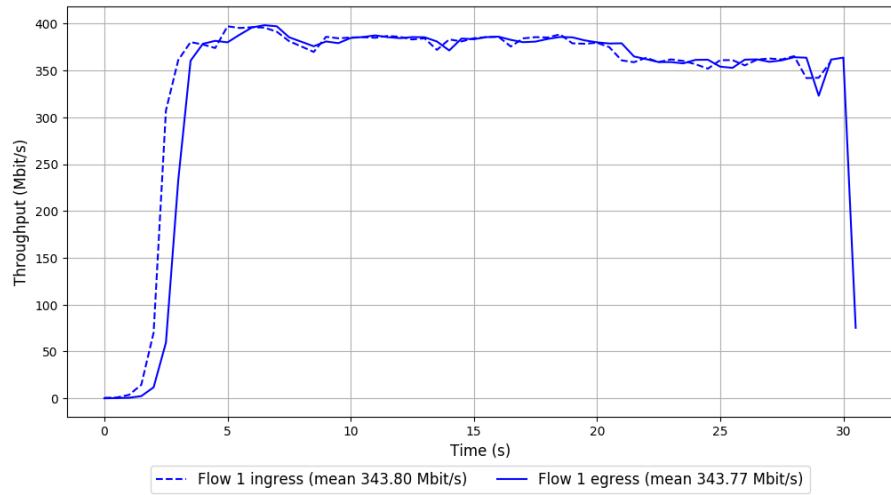


Run 1: Statistics of Copa

```
Start at: 2018-10-02 07:10:30
End at: 2018-10-02 07:11:00
Local clock offset: -0.477 ms
Remote clock offset: -0.071 ms

# Below is generated by plot.py at 2018-10-02 09:41:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 343.77 Mbit/s
95th percentile per-packet one-way delay: 123.604 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 343.77 Mbit/s
95th percentile per-packet one-way delay: 123.604 ms
Loss rate: 0.01%
```

Run 1: Report of Copa — Data Link

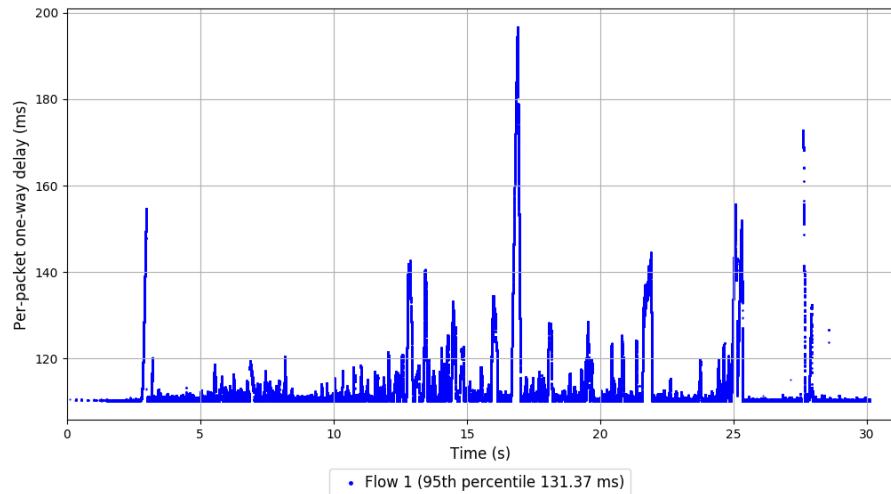
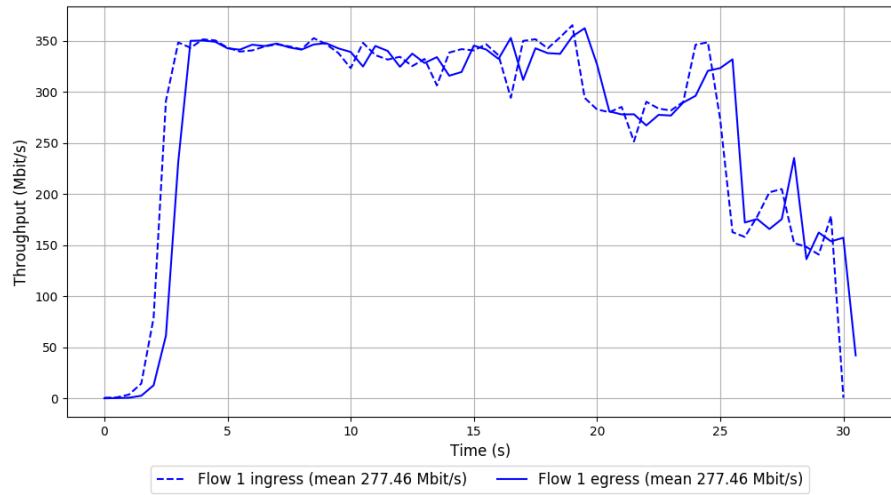


Run 2: Statistics of Copa

```
Start at: 2018-10-02 07:36:54
End at: 2018-10-02 07:37:24
Local clock offset: -0.51 ms
Remote clock offset: -0.512 ms

# Below is generated by plot.py at 2018-10-02 09:41:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 277.46 Mbit/s
95th percentile per-packet one-way delay: 131.372 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 277.46 Mbit/s
95th percentile per-packet one-way delay: 131.372 ms
Loss rate: 0.00%
```

Run 2: Report of Copa — Data Link

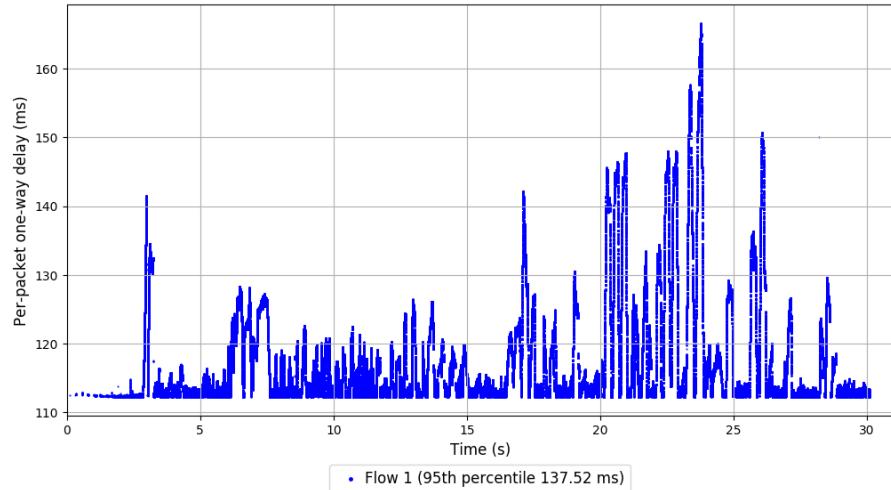
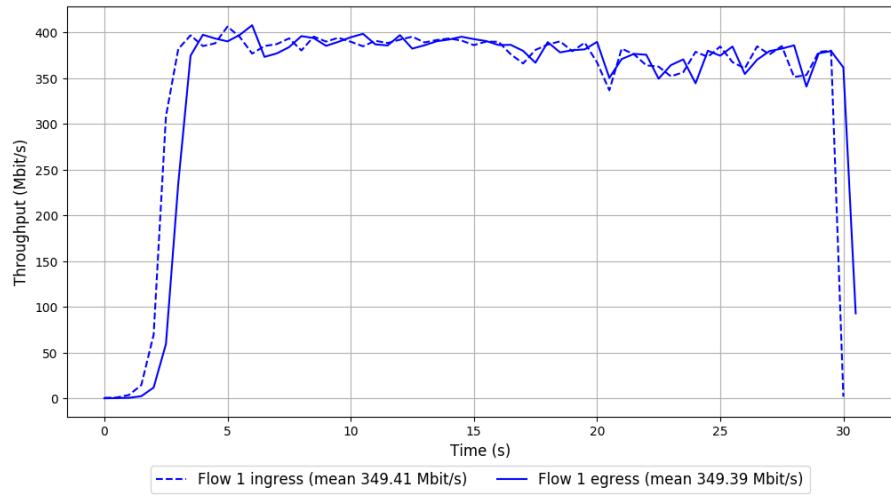


Run 3: Statistics of Copa

```
Start at: 2018-10-02 08:02:52
End at: 2018-10-02 08:03:22
Local clock offset: -0.52 ms
Remote clock offset: 0.236 ms

# Below is generated by plot.py at 2018-10-02 09:41:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 349.39 Mbit/s
95th percentile per-packet one-way delay: 137.518 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 349.39 Mbit/s
95th percentile per-packet one-way delay: 137.518 ms
Loss rate: 0.01%
```

Run 3: Report of Copa — Data Link

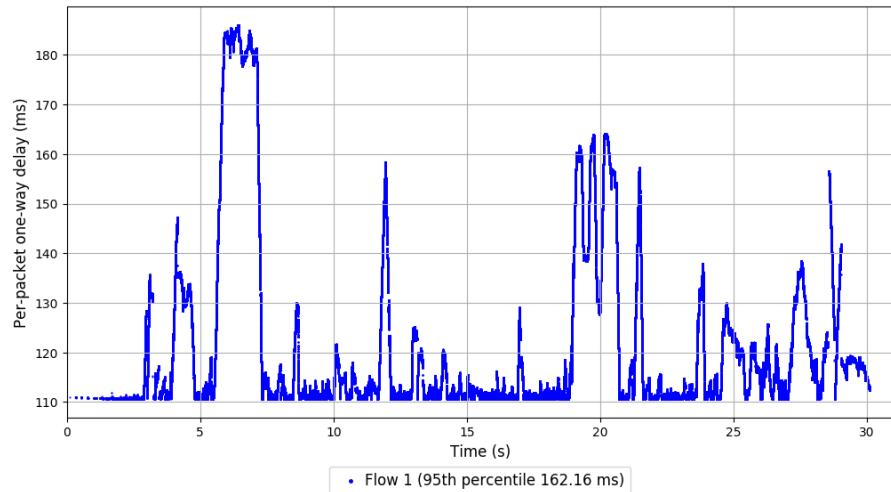
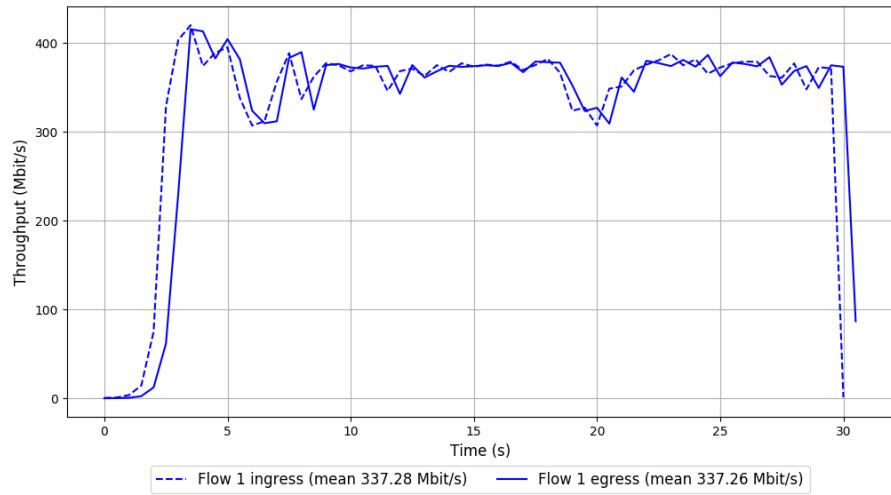


Run 4: Statistics of Copa

```
Start at: 2018-10-02 08:29:28
End at: 2018-10-02 08:29:58
Local clock offset: -0.235 ms
Remote clock offset: 0.316 ms

# Below is generated by plot.py at 2018-10-02 09:49:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 337.26 Mbit/s
95th percentile per-packet one-way delay: 162.156 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 337.26 Mbit/s
95th percentile per-packet one-way delay: 162.156 ms
Loss rate: 0.00%
```

Run 4: Report of Copa — Data Link

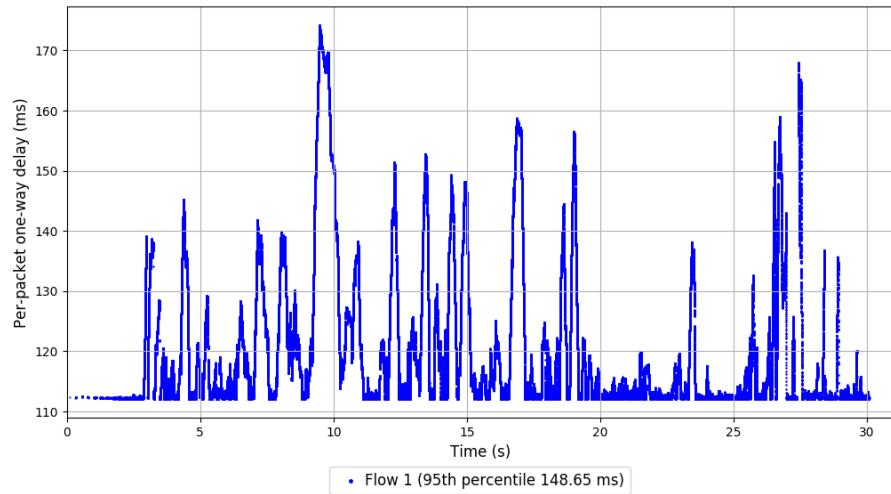
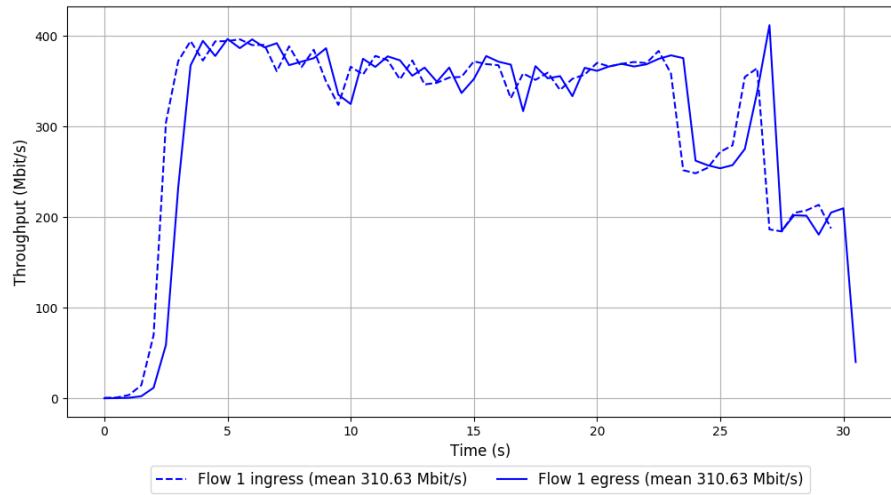


Run 5: Statistics of Copa

```
Start at: 2018-10-02 08:55:55
End at: 2018-10-02 08:56:25
Local clock offset: -0.19 ms
Remote clock offset: 0.332 ms

# Below is generated by plot.py at 2018-10-02 09:49:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 310.63 Mbit/s
95th percentile per-packet one-way delay: 148.647 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 310.63 Mbit/s
95th percentile per-packet one-way delay: 148.647 ms
Loss rate: 0.00%
```

Run 5: Report of Copa — Data Link

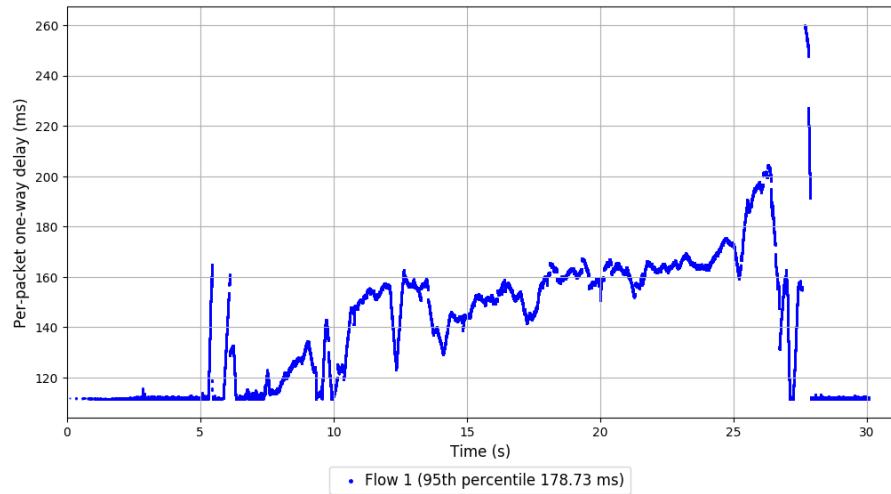
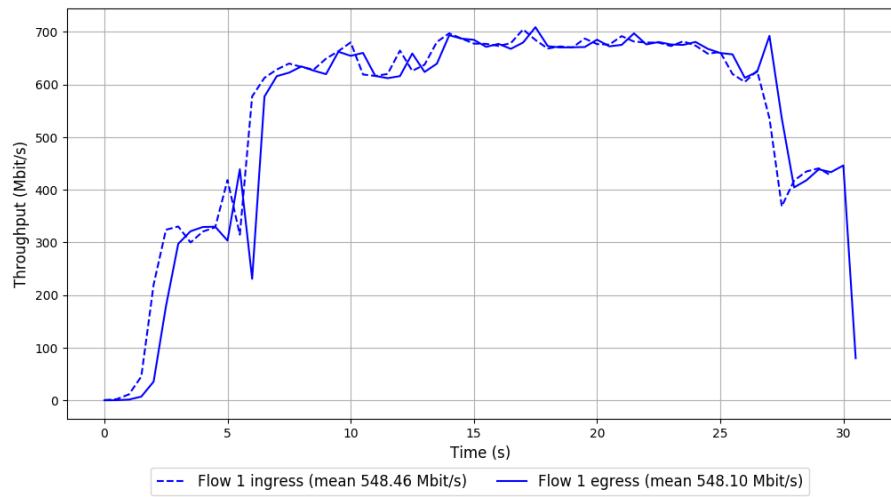


Run 1: Statistics of TCP Cubic

```
Start at: 2018-10-02 07:24:44
End at: 2018-10-02 07:25:14
Local clock offset: -0.707 ms
Remote clock offset: -0.099 ms

# Below is generated by plot.py at 2018-10-02 09:49:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 548.10 Mbit/s
95th percentile per-packet one-way delay: 178.733 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 548.10 Mbit/s
95th percentile per-packet one-way delay: 178.733 ms
Loss rate: 0.07%
```

Run 1: Report of TCP Cubic — Data Link

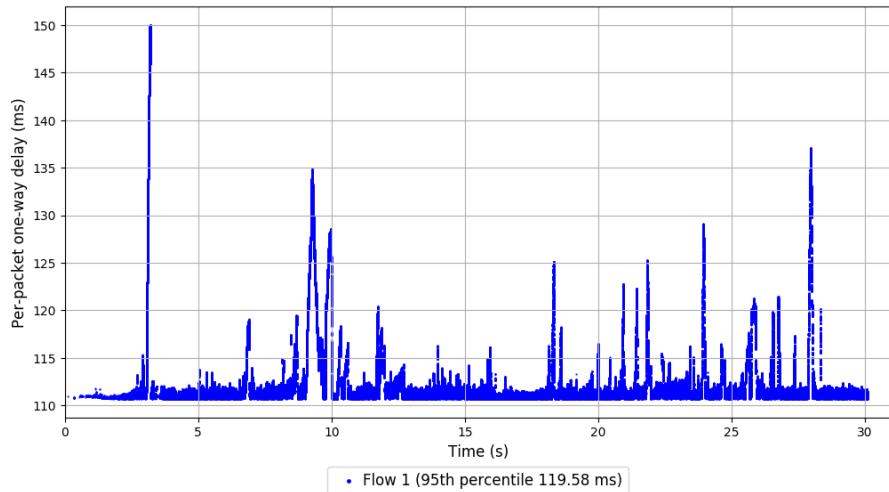
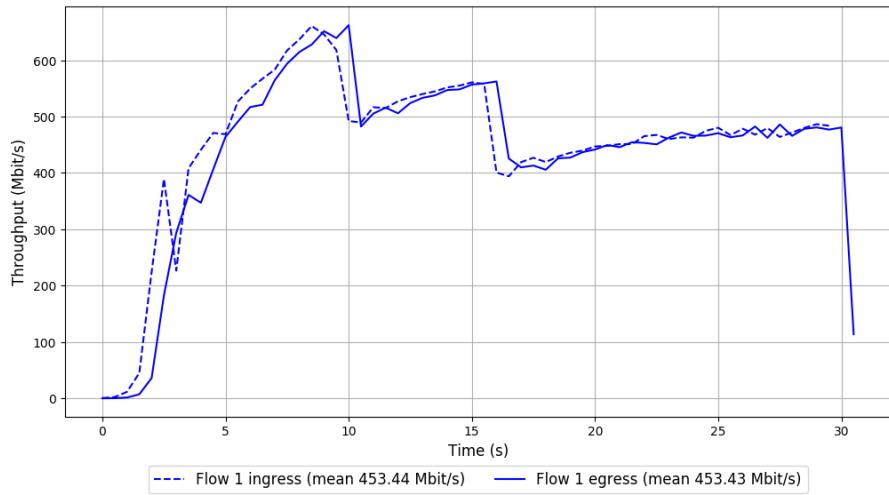


Run 2: Statistics of TCP Cubic

```
Start at: 2018-10-02 07:51:00
End at: 2018-10-02 07:51:30
Local clock offset: -0.248 ms
Remote clock offset: -0.505 ms

# Below is generated by plot.py at 2018-10-02 09:49:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 453.43 Mbit/s
95th percentile per-packet one-way delay: 119.582 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 453.43 Mbit/s
95th percentile per-packet one-way delay: 119.582 ms
Loss rate: 0.00%
```

Run 2: Report of TCP Cubic — Data Link

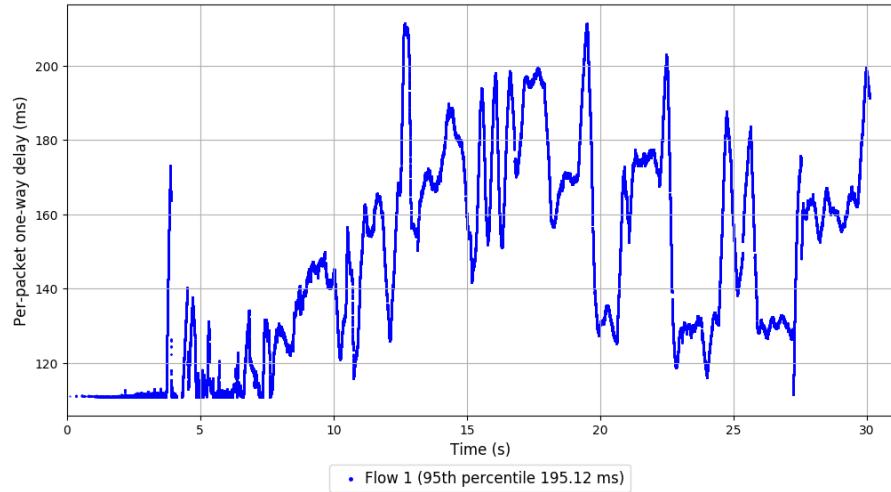
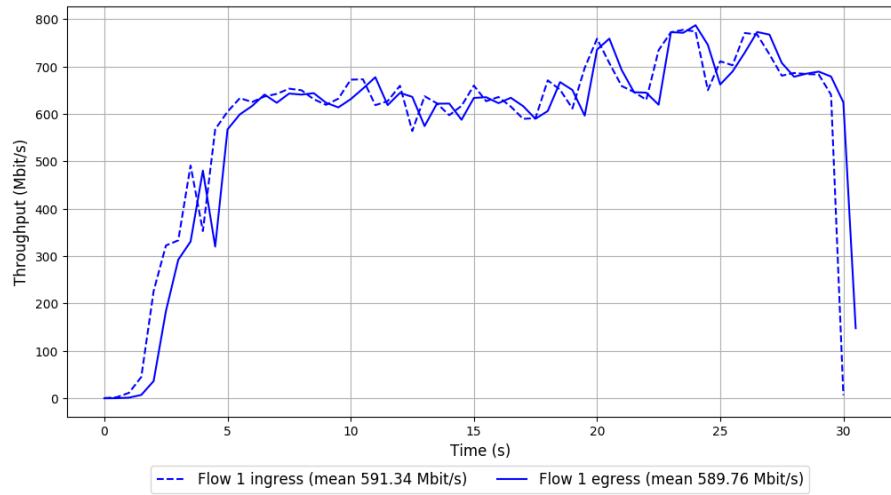


Run 3: Statistics of TCP Cubic

```
Start at: 2018-10-02 08:17:16
End at: 2018-10-02 08:17:46
Local clock offset: -0.182 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-10-02 09:49:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 589.76 Mbit/s
95th percentile per-packet one-way delay: 195.115 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 589.76 Mbit/s
95th percentile per-packet one-way delay: 195.115 ms
Loss rate: 0.27%
```

Run 3: Report of TCP Cubic — Data Link

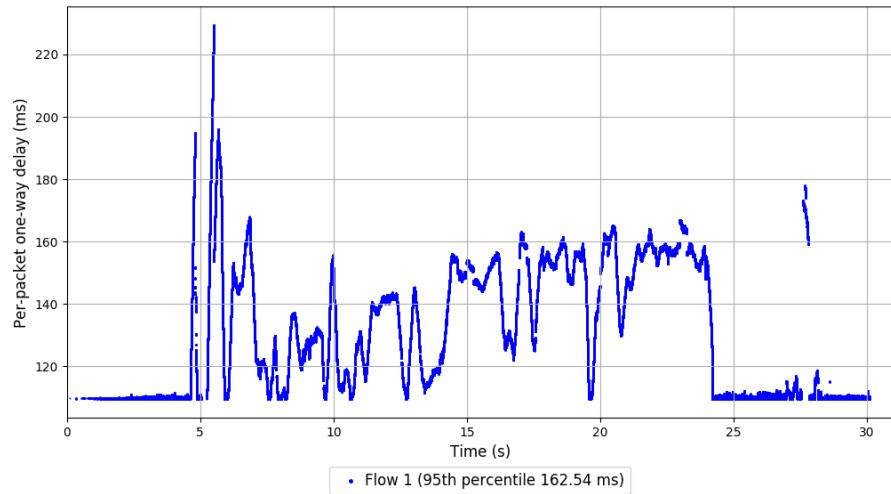
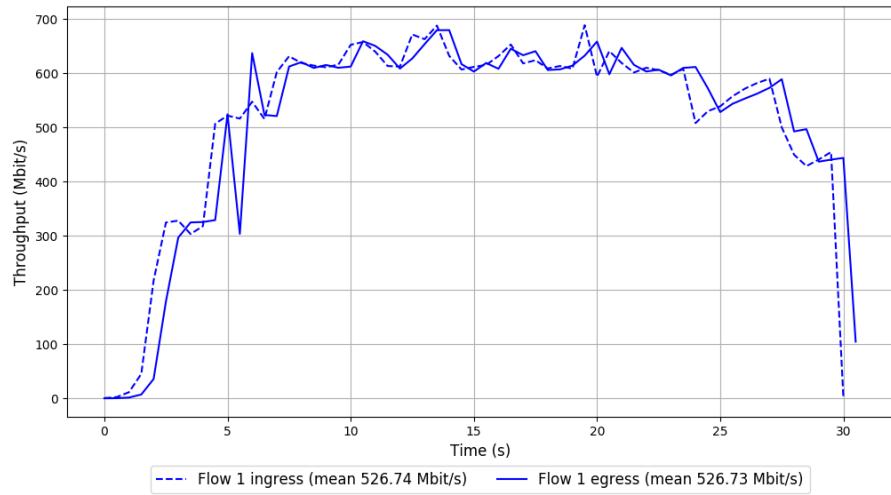


Run 4: Statistics of TCP Cubic

```
Start at: 2018-10-02 08:43:54
End at: 2018-10-02 08:44:24
Local clock offset: 1.232 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2018-10-02 09:49:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 526.73 Mbit/s
95th percentile per-packet one-way delay: 162.537 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 526.73 Mbit/s
95th percentile per-packet one-way delay: 162.537 ms
Loss rate: 0.00%
```

Run 4: Report of TCP Cubic — Data Link

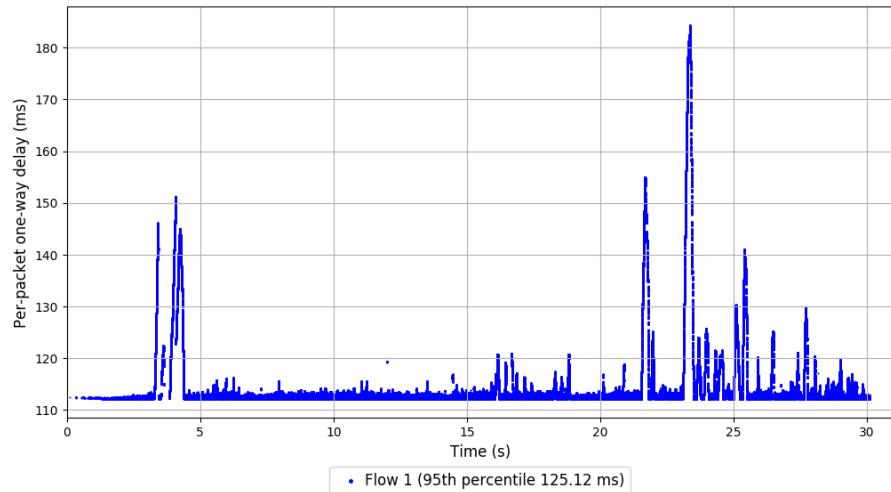
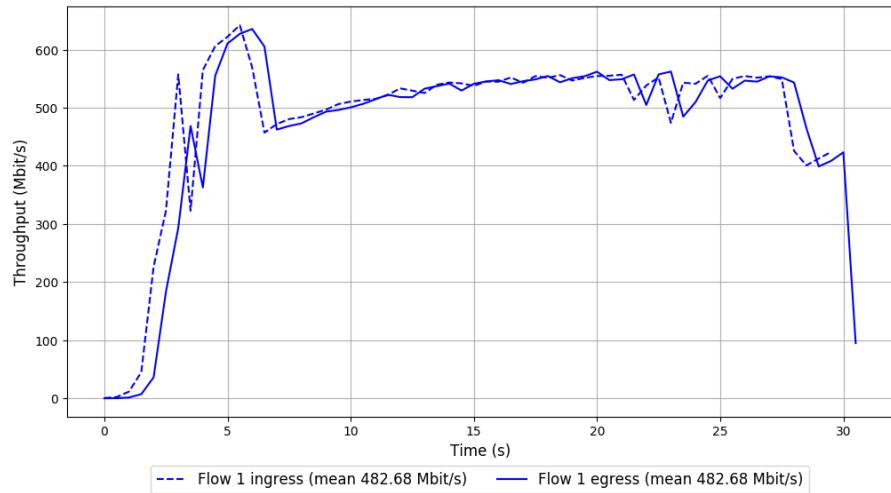


Run 5: Statistics of TCP Cubic

```
Start at: 2018-10-02 09:10:10
End at: 2018-10-02 09:10:40
Local clock offset: -0.807 ms
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2018-10-02 09:49:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 482.68 Mbit/s
95th percentile per-packet one-way delay: 125.120 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 482.68 Mbit/s
95th percentile per-packet one-way delay: 125.120 ms
Loss rate: 0.00%
```

Run 5: Report of TCP Cubic — Data Link

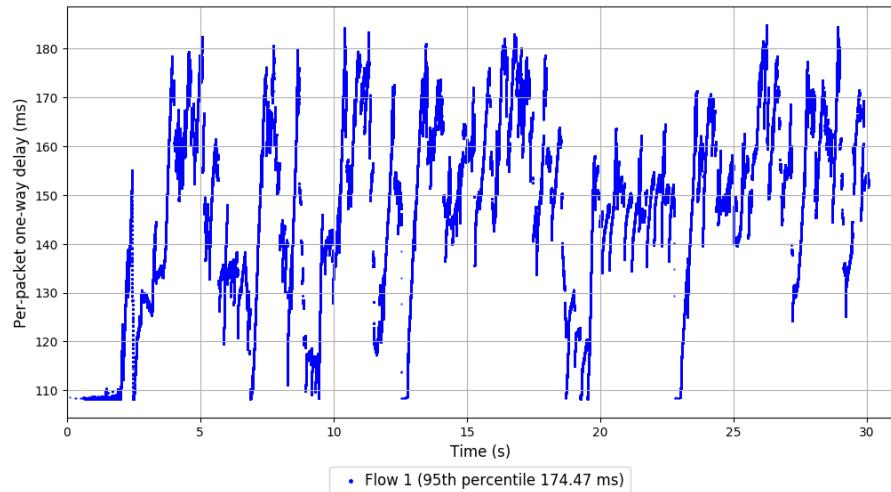
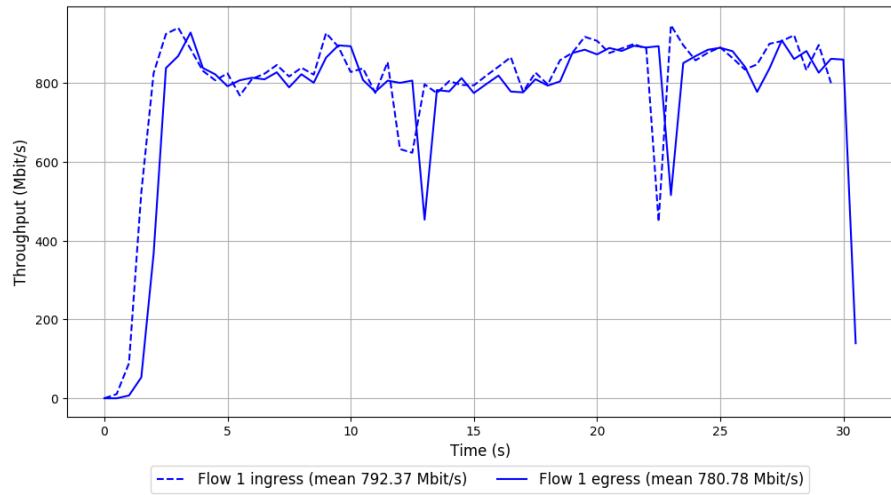


```
Run 1: Statistics of FillP
```

```
Start at: 2018-10-02 07:23:01
End at: 2018-10-02 07:23:31
Local clock offset: 1.245 ms
Remote clock offset: -0.452 ms

# Below is generated by plot.py at 2018-10-02 09:56:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 780.78 Mbit/s
95th percentile per-packet one-way delay: 174.466 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 780.78 Mbit/s
95th percentile per-packet one-way delay: 174.466 ms
Loss rate: 1.46%
```

Run 1: Report of FillP — Data Link

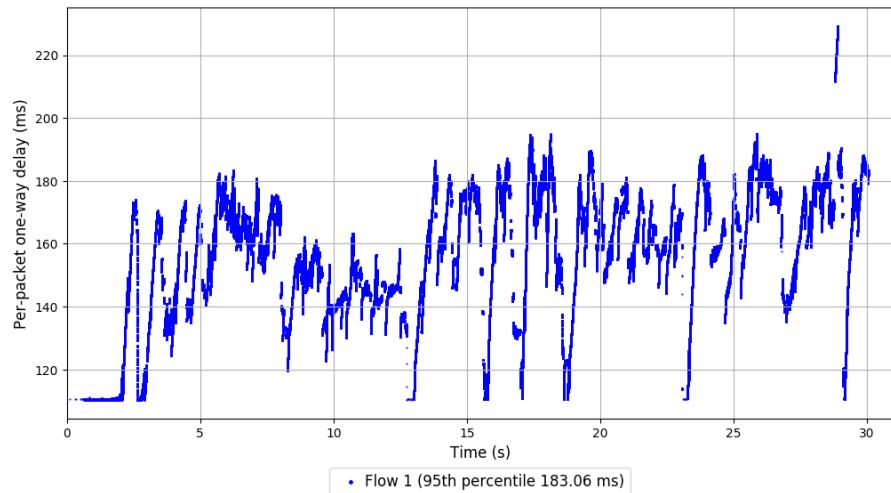
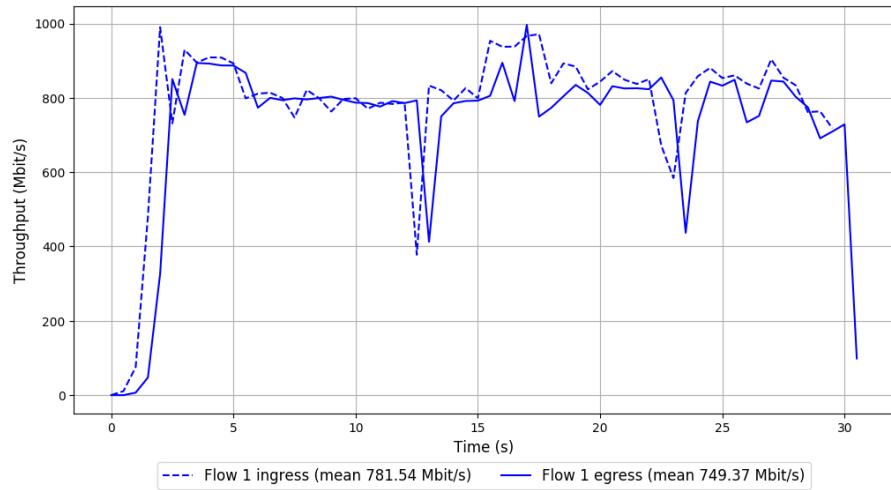


Run 2: Statistics of FillP

```
Start at: 2018-10-02 07:49:19
End at: 2018-10-02 07:49:49
Local clock offset: 1.191 ms
Remote clock offset: -0.145 ms

# Below is generated by plot.py at 2018-10-02 10:03:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 749.37 Mbit/s
95th percentile per-packet one-way delay: 183.059 ms
Loss rate: 4.11%
-- Flow 1:
Average throughput: 749.37 Mbit/s
95th percentile per-packet one-way delay: 183.059 ms
Loss rate: 4.11%
```

Run 2: Report of FillP — Data Link

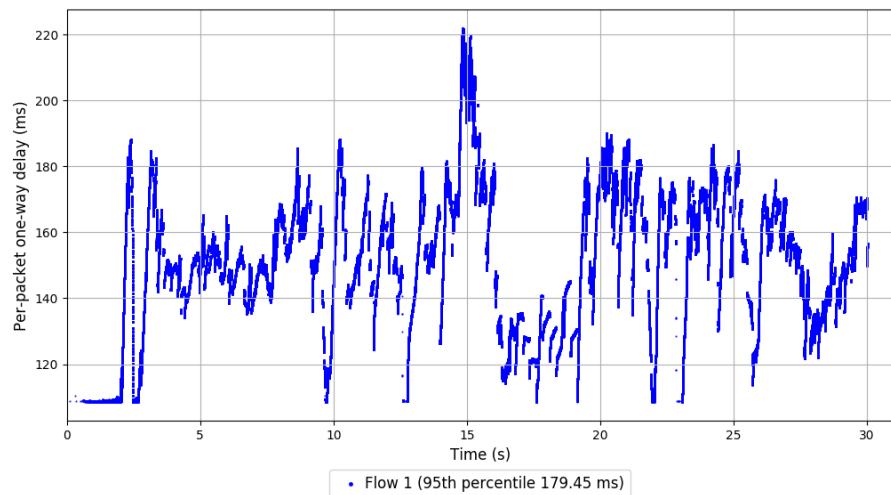
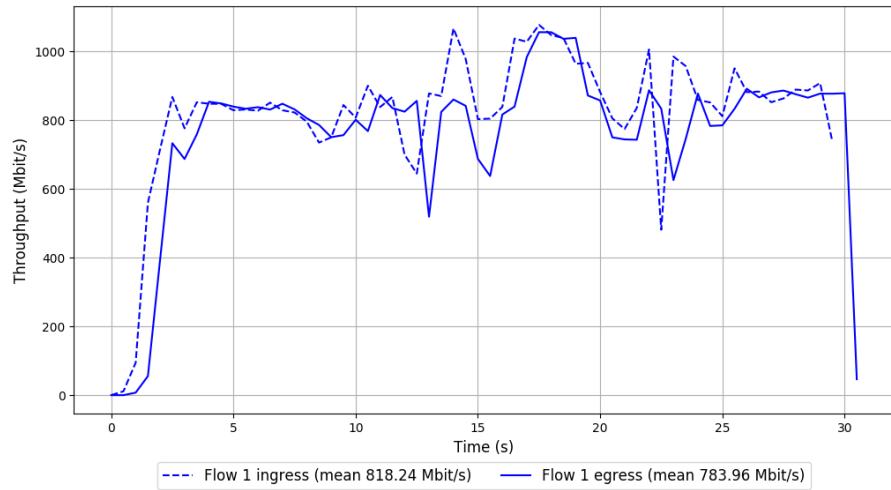


Run 3: Statistics of FillP

```
Start at: 2018-10-02 08:15:33
End at: 2018-10-02 08:16:03
Local clock offset: 1.28 ms
Remote clock offset: -0.086 ms

# Below is generated by plot.py at 2018-10-02 10:05:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 783.96 Mbit/s
95th percentile per-packet one-way delay: 179.451 ms
Loss rate: 4.19%
-- Flow 1:
Average throughput: 783.96 Mbit/s
95th percentile per-packet one-way delay: 179.451 ms
Loss rate: 4.19%
```

Run 3: Report of FillP — Data Link

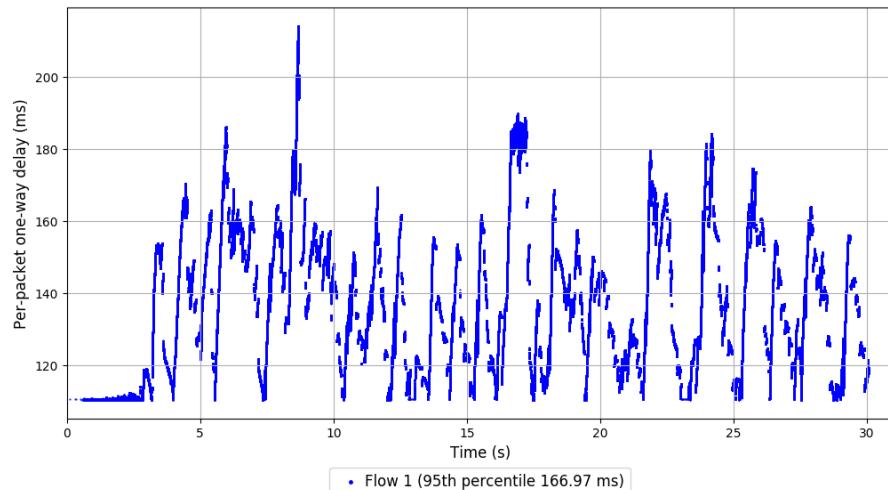
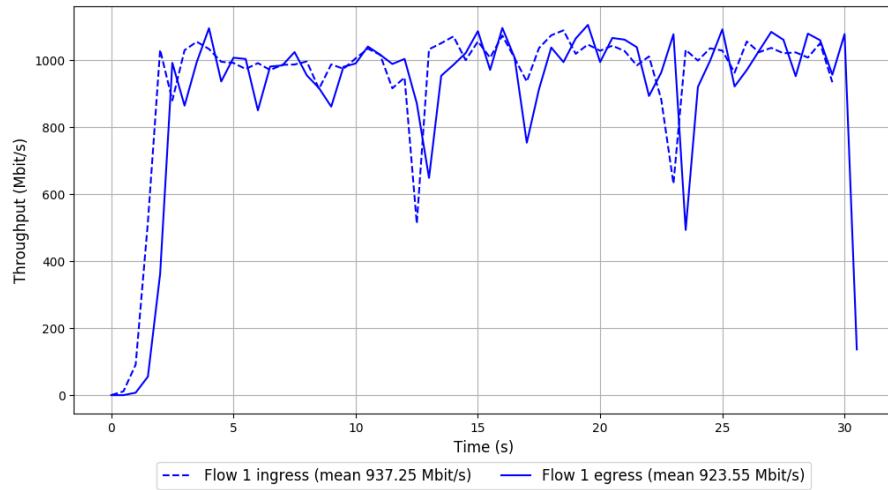


Run 4: Statistics of FillP

```
Start at: 2018-10-02 08:42:05
End at: 2018-10-02 08:42:35
Local clock offset: -0.112 ms
Remote clock offset: 0.296 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 923.55 Mbit/s
95th percentile per-packet one-way delay: 166.966 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 923.55 Mbit/s
95th percentile per-packet one-way delay: 166.966 ms
Loss rate: 1.46%
```

Run 4: Report of FillP — Data Link

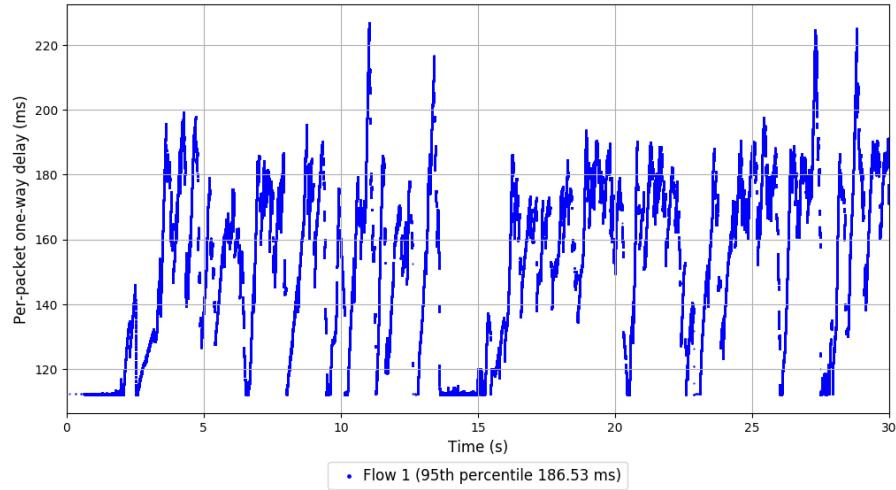
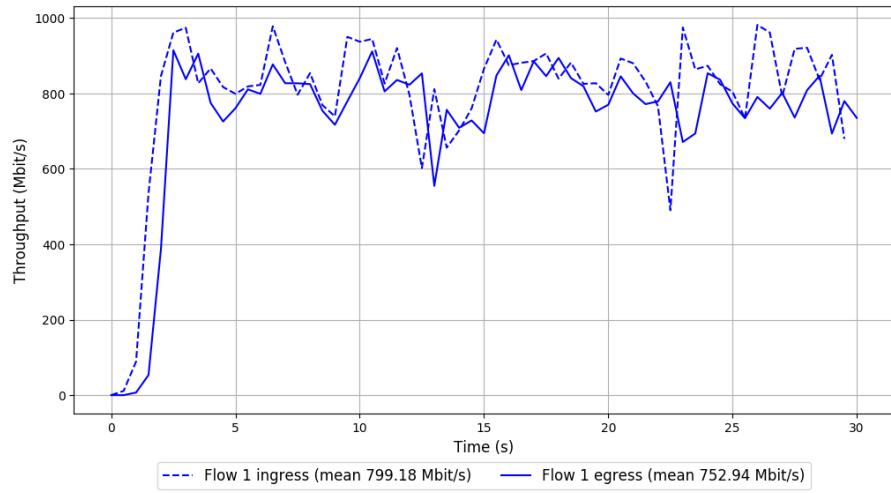


```
Run 5: Statistics of FillP
```

```
Start at: 2018-10-02 09:08:29
End at: 2018-10-02 09:08:59
Local clock offset: -0.248 ms
Remote clock offset: 0.309 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 752.94 Mbit/s
95th percentile per-packet one-way delay: 186.529 ms
Loss rate: 5.76%
-- Flow 1:
Average throughput: 752.94 Mbit/s
95th percentile per-packet one-way delay: 186.529 ms
Loss rate: 5.76%
```

Run 5: Report of FillP — Data Link

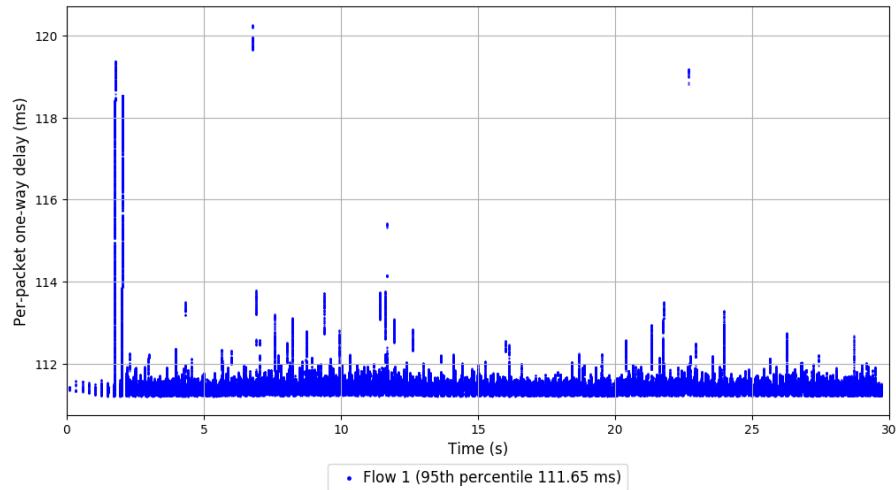
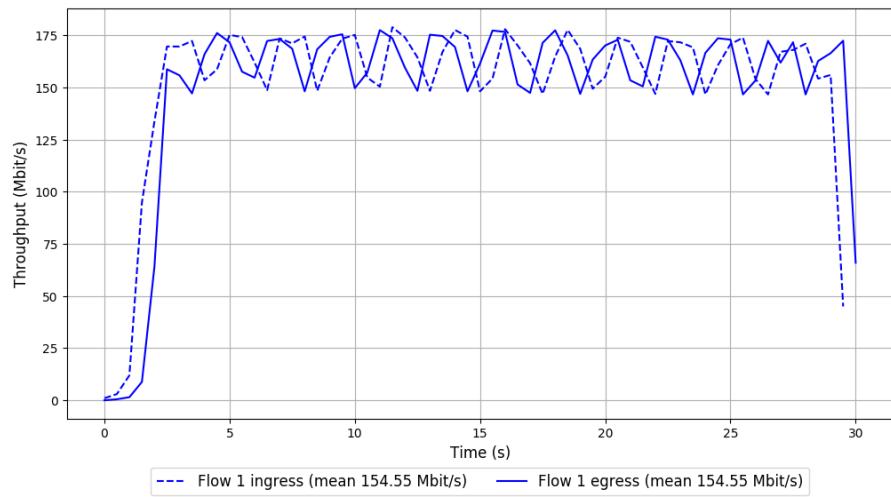


Run 1: Statistics of Indigo

```
Start at: 2018-10-02 07:29:10
End at: 2018-10-02 07:29:40
Local clock offset: 0.139 ms
Remote clock offset: -0.147 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 154.55 Mbit/s
95th percentile per-packet one-way delay: 111.652 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 154.55 Mbit/s
95th percentile per-packet one-way delay: 111.652 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo — Data Link

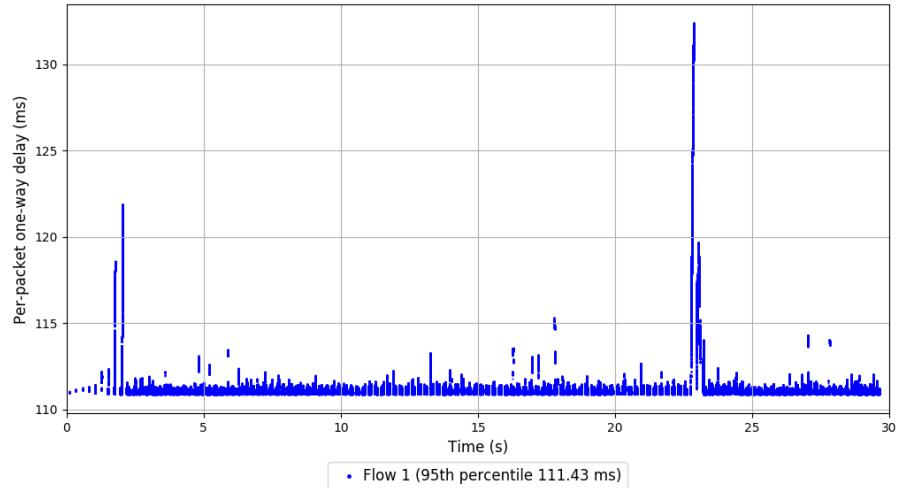
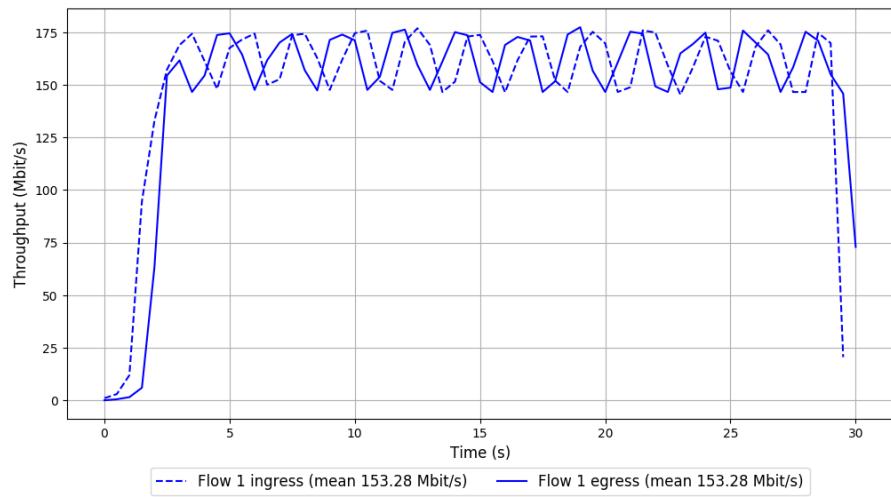


Run 2: Statistics of Indigo

```
Start at: 2018-10-02 07:55:09
End at: 2018-10-02 07:55:39
Local clock offset: 0.112 ms
Remote clock offset: -0.499 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 153.28 Mbit/s
95th percentile per-packet one-way delay: 111.434 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 153.28 Mbit/s
95th percentile per-packet one-way delay: 111.434 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo — Data Link

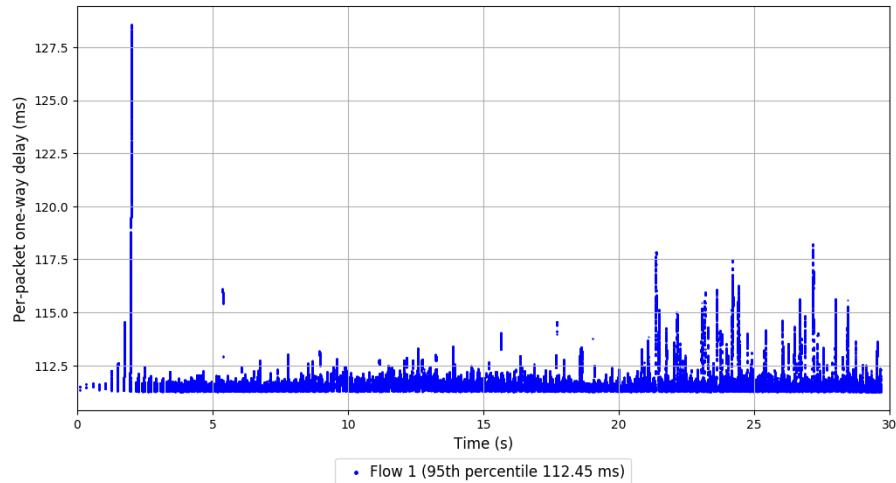
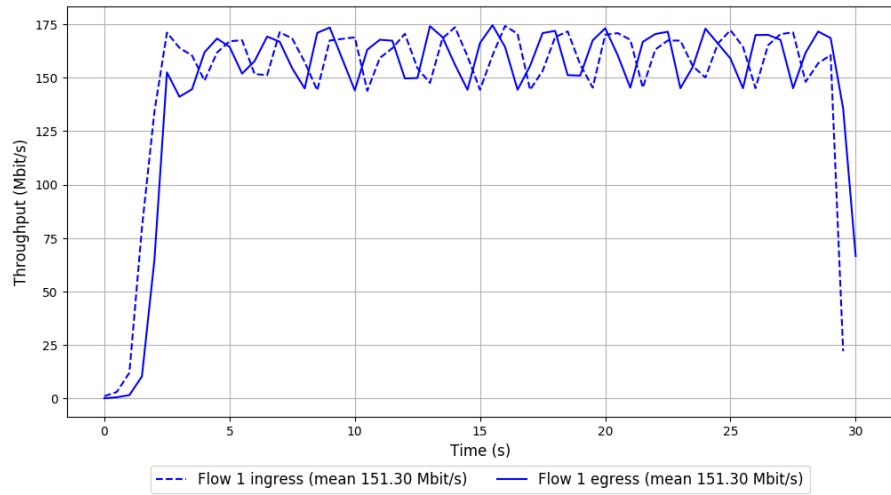


Run 3: Statistics of Indigo

```
Start at: 2018-10-02 08:21:43
End at: 2018-10-02 08:22:13
Local clock offset: -0.131 ms
Remote clock offset: 0.259 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 151.30 Mbit/s
95th percentile per-packet one-way delay: 112.449 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 151.30 Mbit/s
95th percentile per-packet one-way delay: 112.449 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

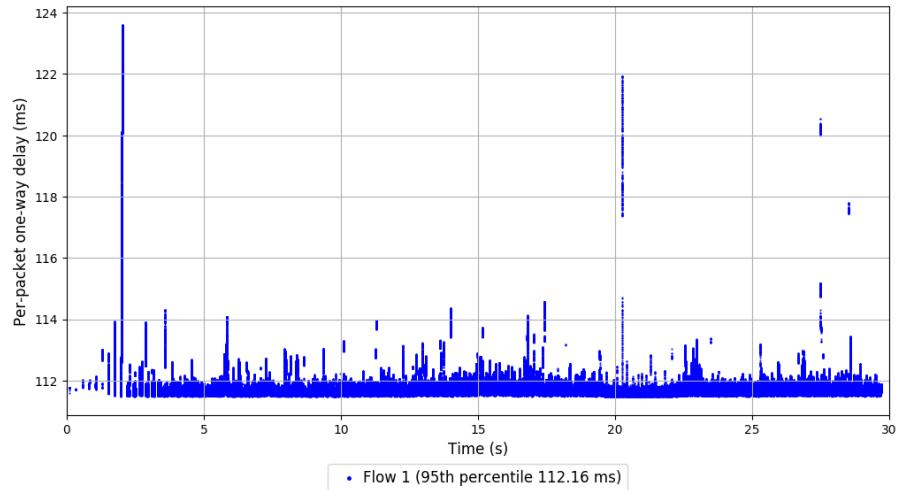
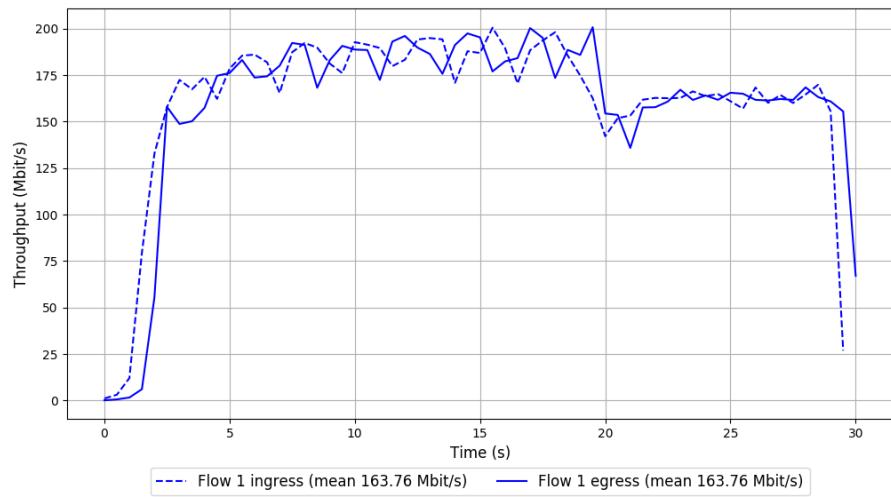


Run 4: Statistics of Indigo

```
Start at: 2018-10-02 08:48:15
End at: 2018-10-02 08:48:45
Local clock offset: -0.044 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 163.76 Mbit/s
95th percentile per-packet one-way delay: 112.158 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 163.76 Mbit/s
95th percentile per-packet one-way delay: 112.158 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo — Data Link

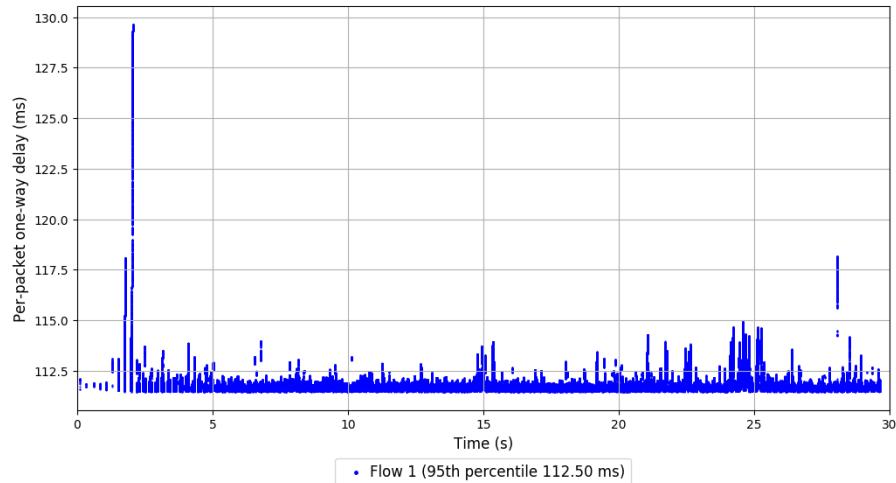
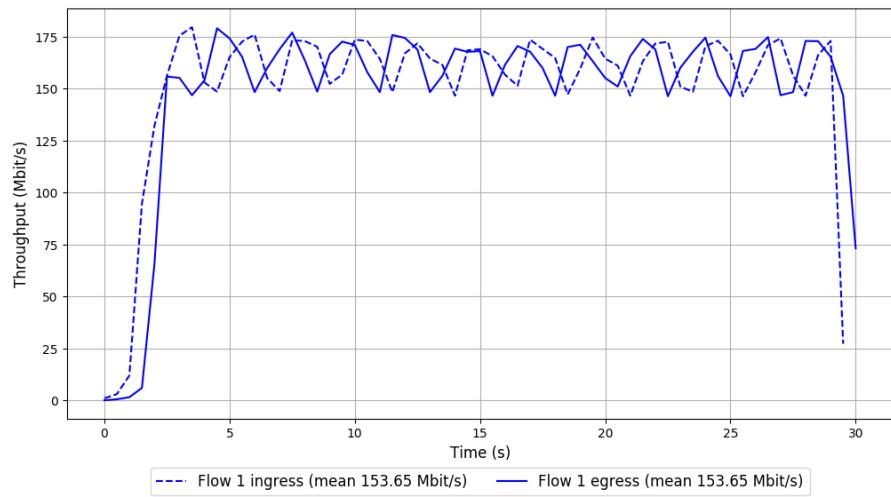


Run 5: Statistics of Indigo

```
Start at: 2018-10-02 09:14:27
End at: 2018-10-02 09:14:57
Local clock offset: -0.195 ms
Remote clock offset: -0.036 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 153.65 Mbit/s
95th percentile per-packet one-way delay: 112.498 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 153.65 Mbit/s
95th percentile per-packet one-way delay: 112.498 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo — Data Link

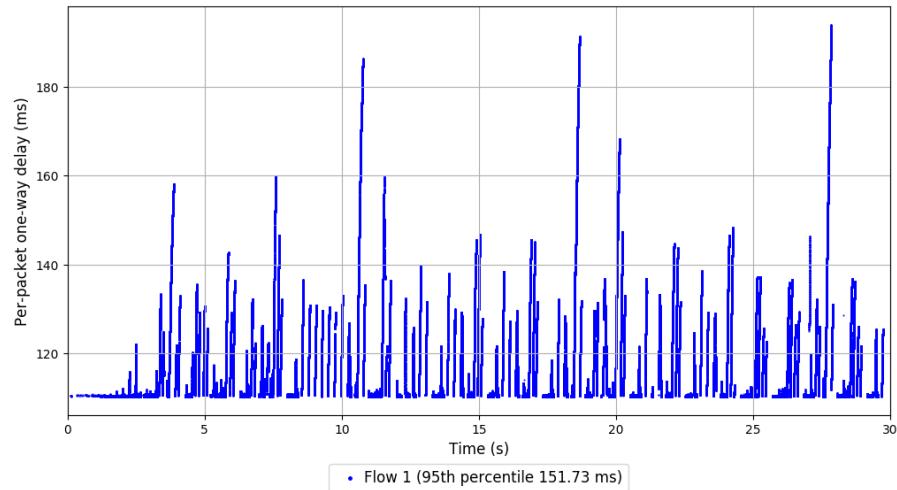
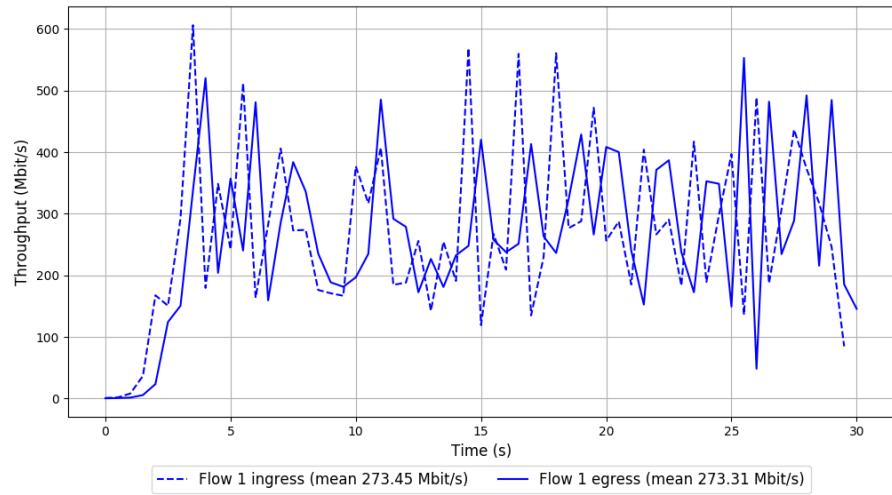


```
Run 1: Statistics of Indigo-96d2da3
```

```
Start at: 2018-10-02 07:20:29
End at: 2018-10-02 07:20:59
Local clock offset: 0.042 ms
Remote clock offset: -0.469 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 273.31 Mbit/s
95th percentile per-packet one-way delay: 151.729 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 273.31 Mbit/s
95th percentile per-packet one-way delay: 151.729 ms
Loss rate: 0.00%
```

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

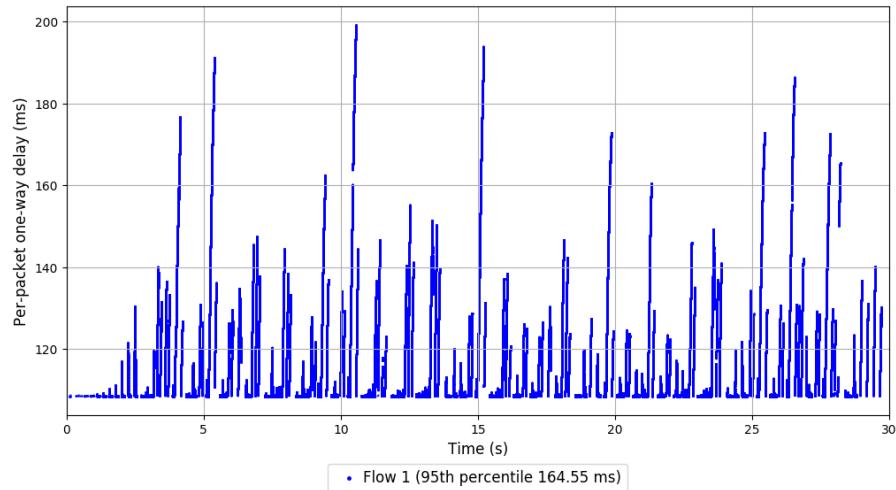
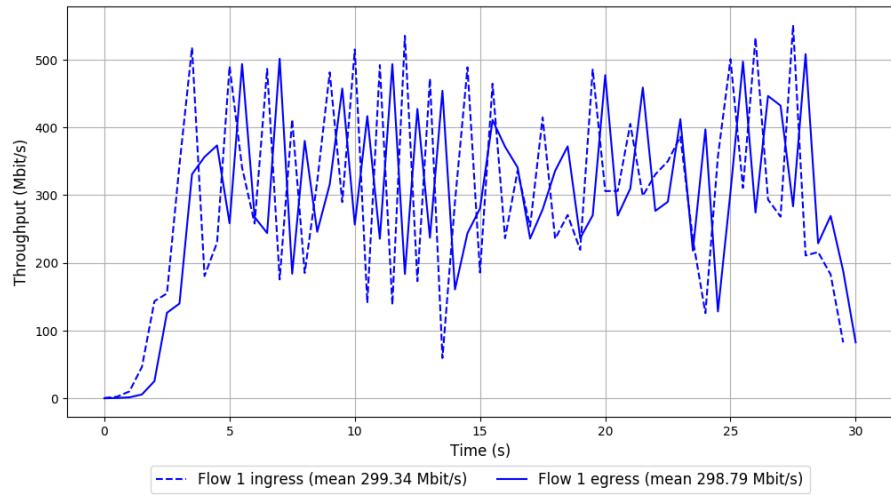


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-10-02 07:46:46
End at: 2018-10-02 07:47:16
Local clock offset: 1.306 ms
Remote clock offset: -0.504 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 298.79 Mbit/s
95th percentile per-packet one-way delay: 164.553 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 298.79 Mbit/s
95th percentile per-packet one-way delay: 164.553 ms
Loss rate: 0.13%
```

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

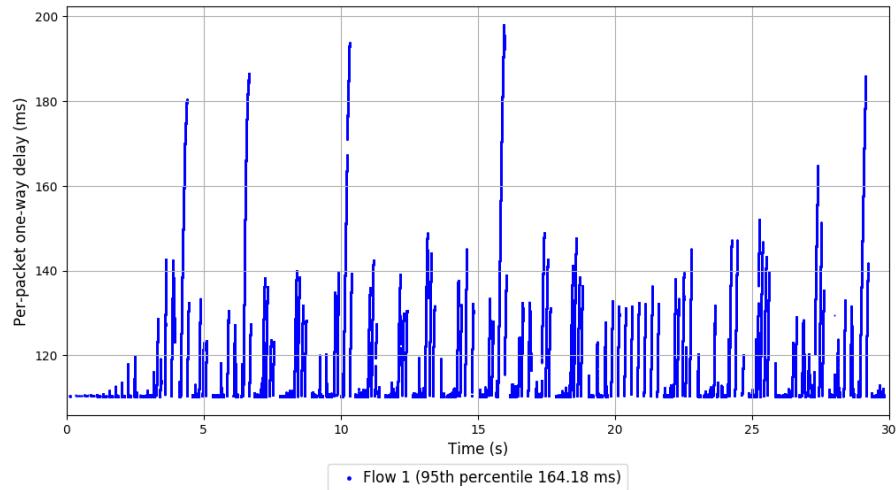
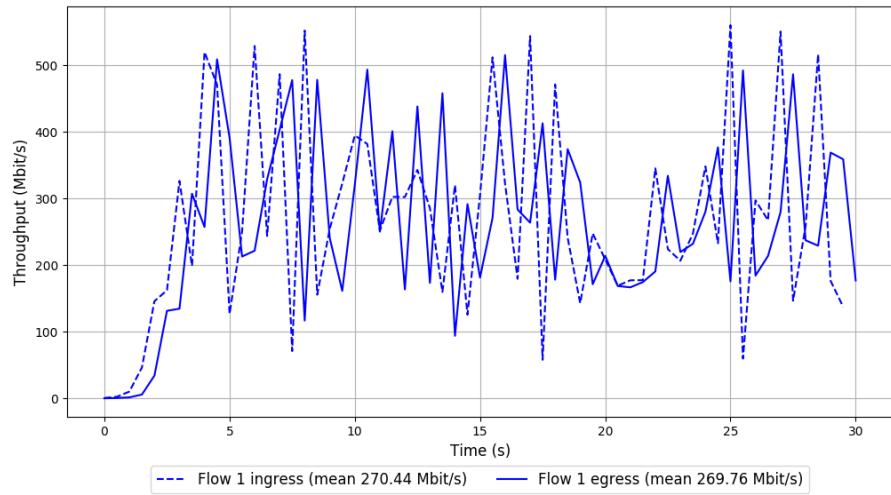


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-10-02 08:13:02
End at: 2018-10-02 08:13:32
Local clock offset: -0.014 ms
Remote clock offset: 0.258 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 269.76 Mbit/s
95th percentile per-packet one-way delay: 164.177 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 269.76 Mbit/s
95th percentile per-packet one-way delay: 164.177 ms
Loss rate: 0.25%
```

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

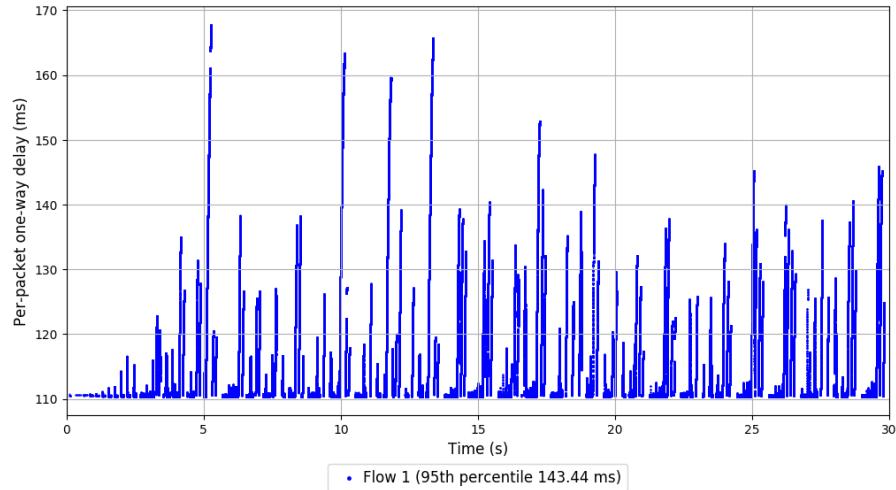
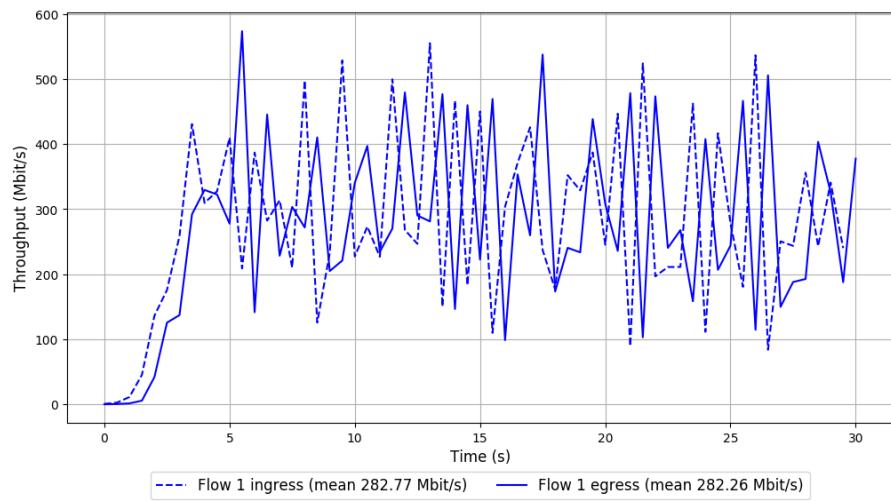


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-10-02 08:39:32
End at: 2018-10-02 08:40:02
Local clock offset: 1.353 ms
Remote clock offset: 0.298 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 282.26 Mbit/s
95th percentile per-packet one-way delay: 143.444 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 282.26 Mbit/s
95th percentile per-packet one-way delay: 143.444 ms
Loss rate: 0.18%
```

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

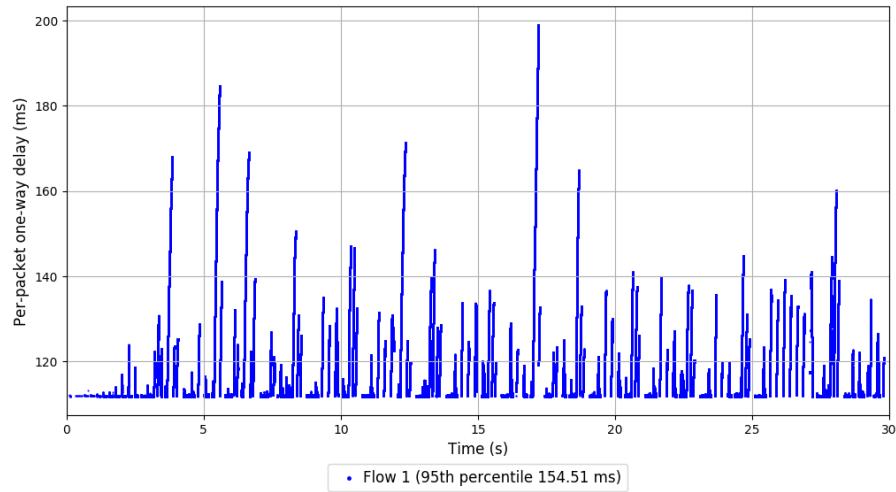
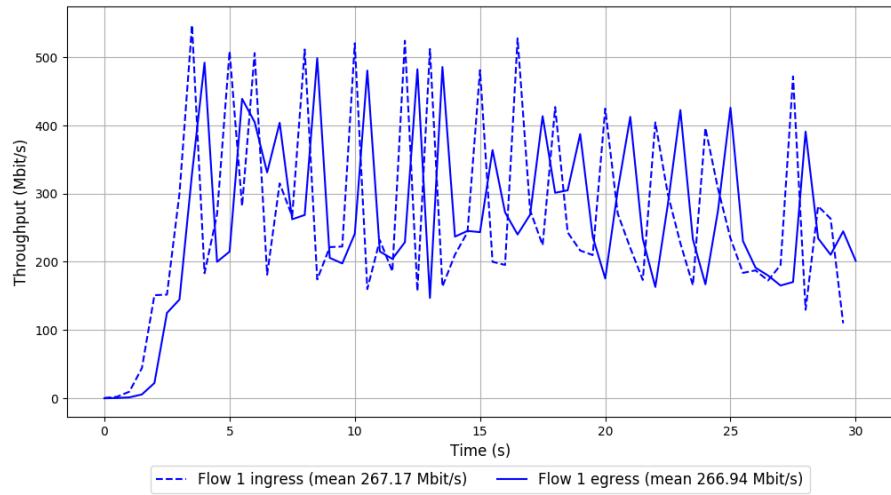


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-10-02 09:05:57
End at: 2018-10-02 09:06:27
Local clock offset: -0.837 ms
Remote clock offset: -0.393 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 266.94 Mbit/s
95th percentile per-packet one-way delay: 154.511 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 266.94 Mbit/s
95th percentile per-packet one-way delay: 154.511 ms
Loss rate: 0.09%
```

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

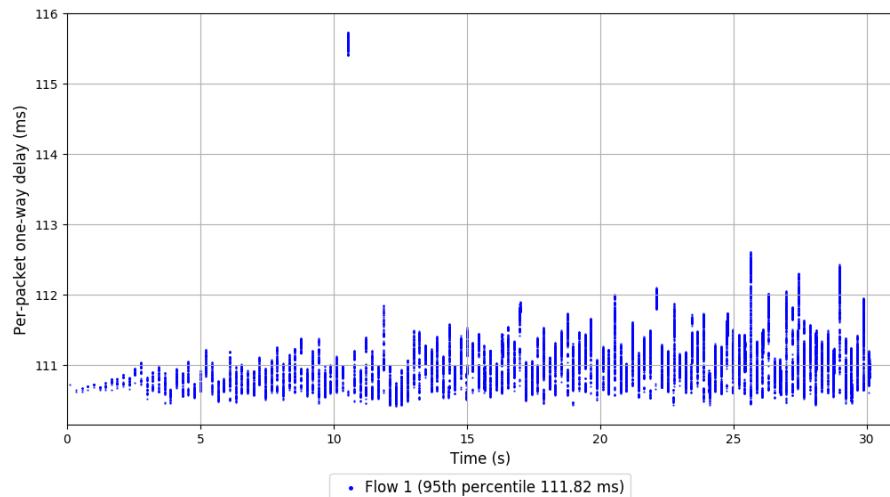
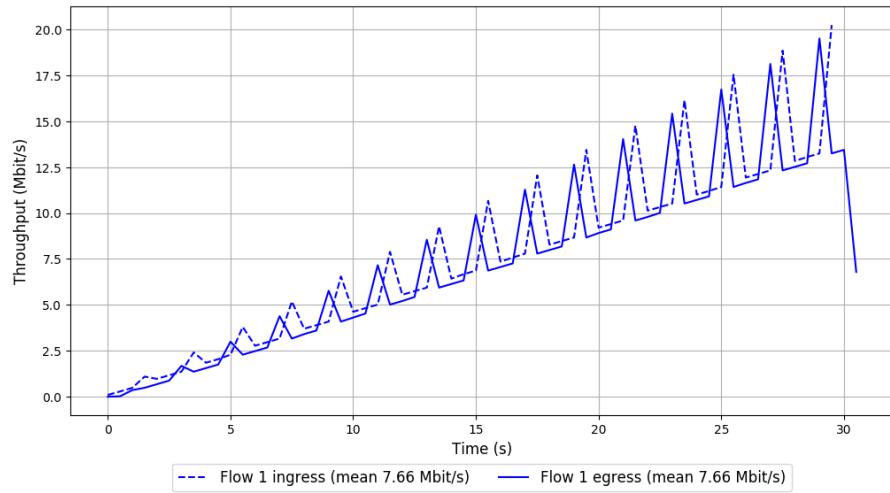


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-10-02 07:27:59
End at: 2018-10-02 07:28:30
Local clock offset: 0.164 ms
Remote clock offset: -0.472 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 111.817 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 111.817 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

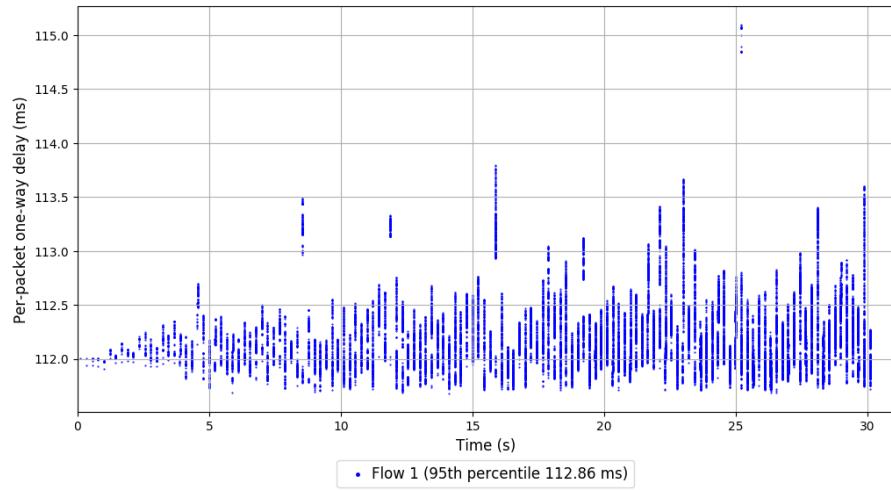
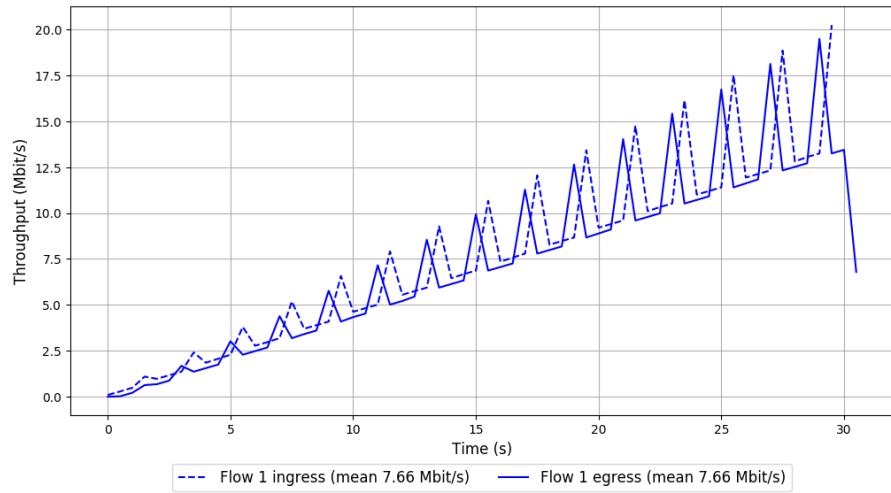


Run 2: Statistics of LEDBAT

```
Start at: 2018-10-02 07:53:59
End at: 2018-10-02 07:54:29
Local clock offset: -0.782 ms
Remote clock offset: -0.148 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 112.861 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 112.861 ms
Loss rate: 0.00%
```

Run 2: Report of LEDBAT — Data Link

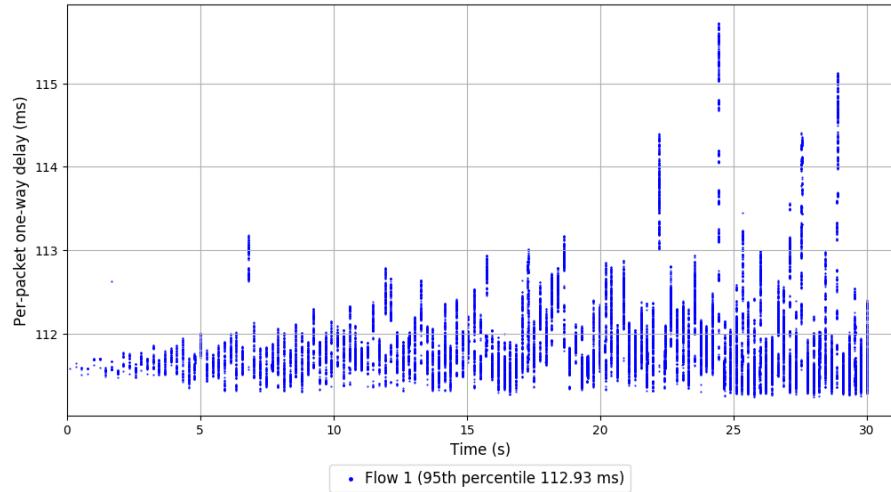
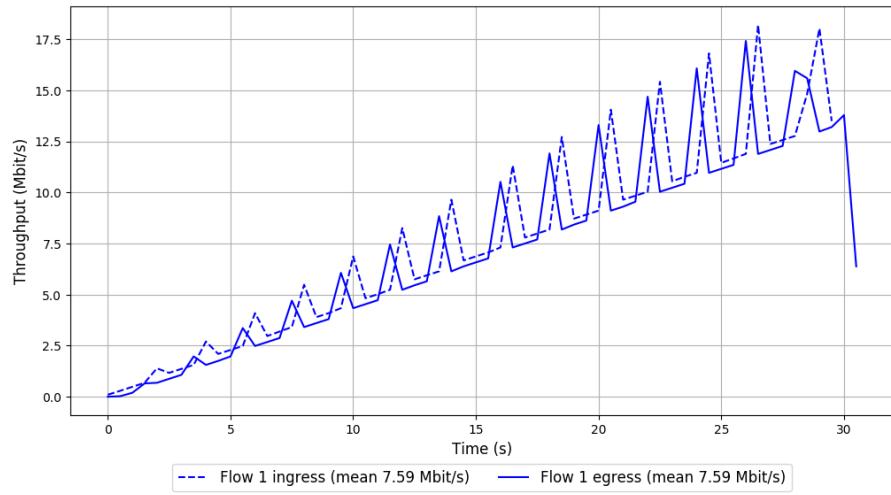


Run 3: Statistics of LEDBAT

```
Start at: 2018-10-02 08:20:33
End at: 2018-10-02 08:21:03
Local clock offset: -0.08 ms
Remote clock offset: 0.282 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 112.934 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 112.934 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

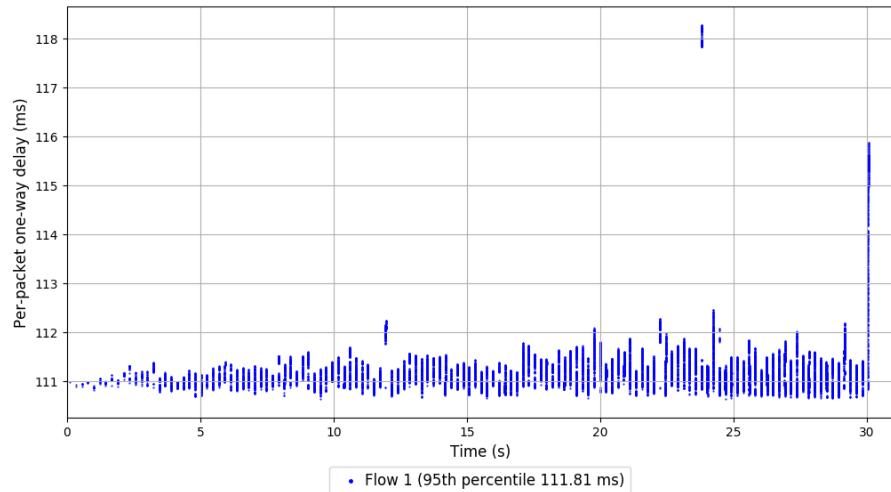
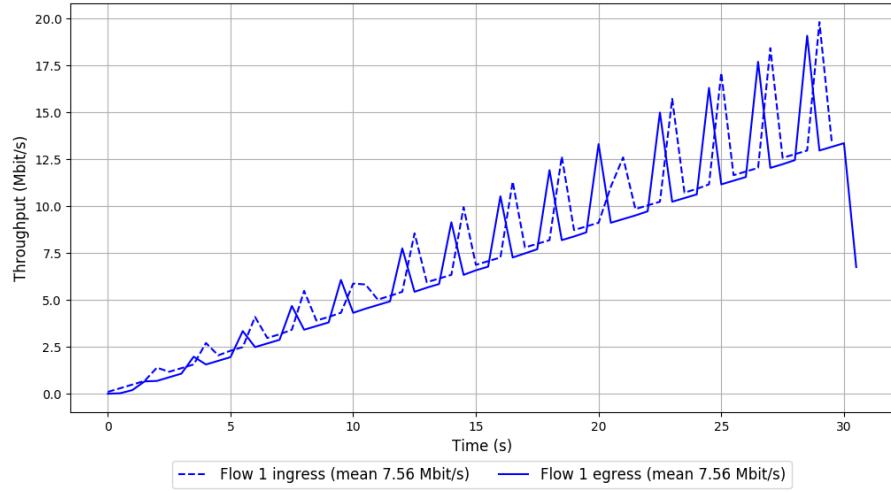


Run 4: Statistics of LEDBAT

```
Start at: 2018-10-02 08:47:05
End at: 2018-10-02 08:47:35
Local clock offset: -0.091 ms
Remote clock offset: -0.385 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 111.814 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 111.814 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

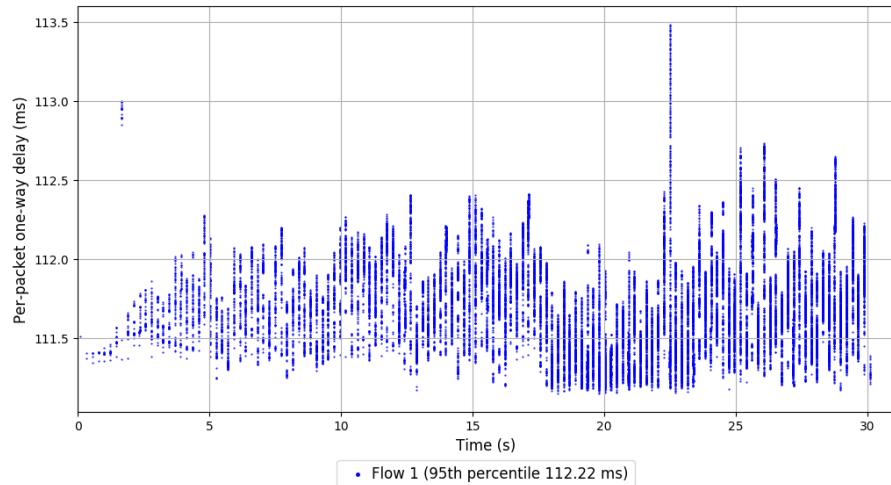
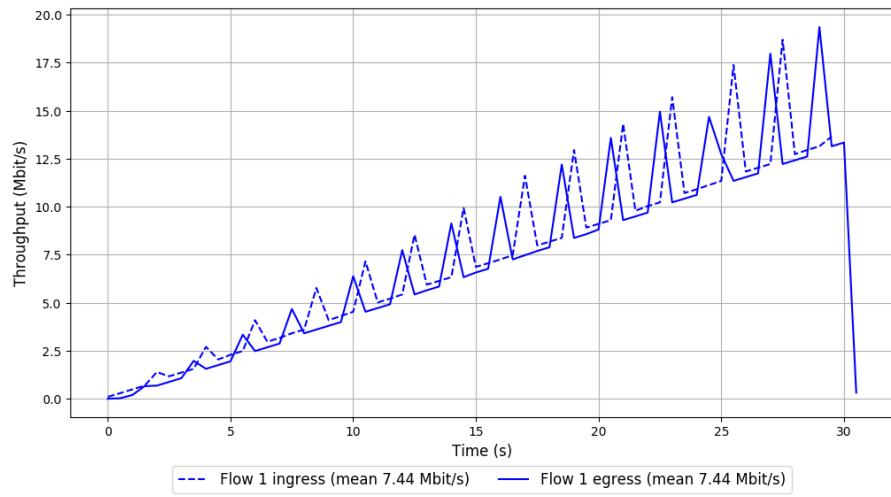


Run 5: Statistics of LEDBAT

```
Start at: 2018-10-02 09:13:17
End at: 2018-10-02 09:13:47
Local clock offset: -0.032 ms
Remote clock offset: -0.073 ms

# Below is generated by plot.py at 2018-10-02 10:07:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.44 Mbit/s
95th percentile per-packet one-way delay: 112.224 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.44 Mbit/s
95th percentile per-packet one-way delay: 112.224 ms
Loss rate: 0.00%
```

Run 5: Report of LEDBAT — Data Link

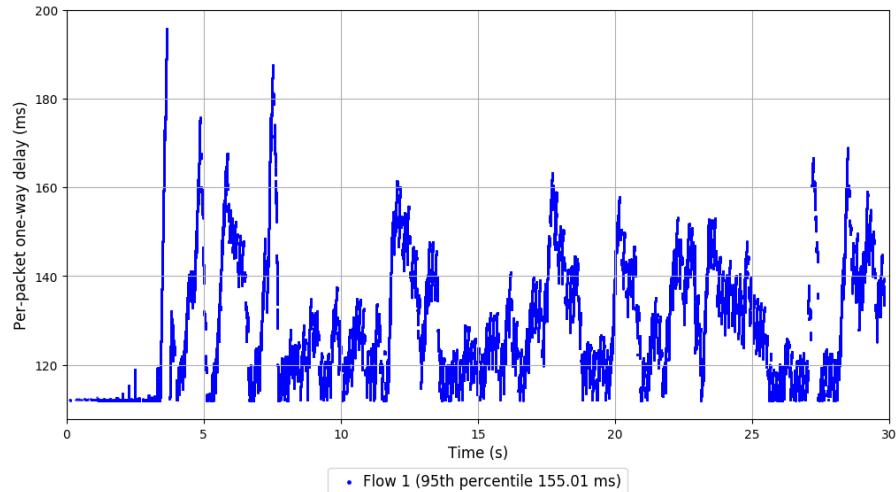
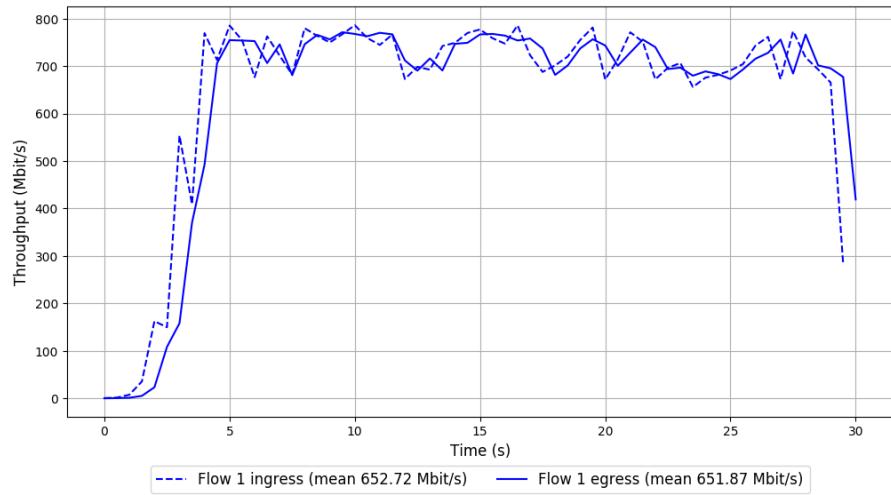


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-10-02 07:13:55
End at: 2018-10-02 07:14:25
Local clock offset: -0.57 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-10-02 10:14:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 651.87 Mbit/s
95th percentile per-packet one-way delay: 155.010 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 651.87 Mbit/s
95th percentile per-packet one-way delay: 155.010 ms
Loss rate: 0.13%
```

Run 1: Report of Indigo-Muses — Data Link

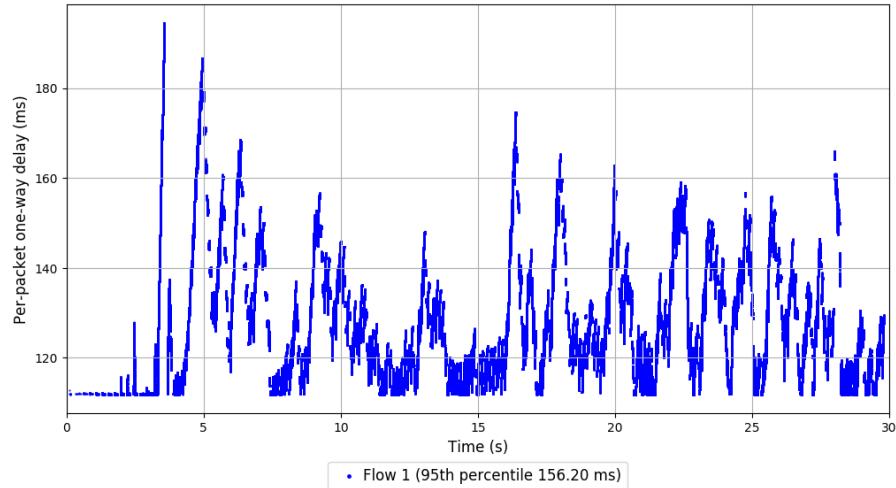
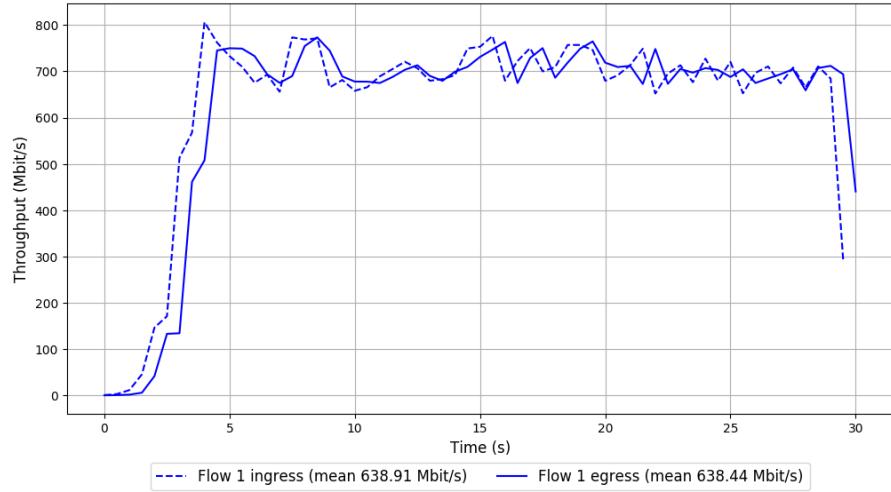


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-10-02 07:40:12
End at: 2018-10-02 07:40:42
Local clock offset: -0.128 ms
Remote clock offset: 0.233 ms

# Below is generated by plot.py at 2018-10-02 10:14:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 638.44 Mbit/s
95th percentile per-packet one-way delay: 156.203 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 638.44 Mbit/s
95th percentile per-packet one-way delay: 156.203 ms
Loss rate: 0.08%
```

Run 2: Report of Indigo-Muses — Data Link

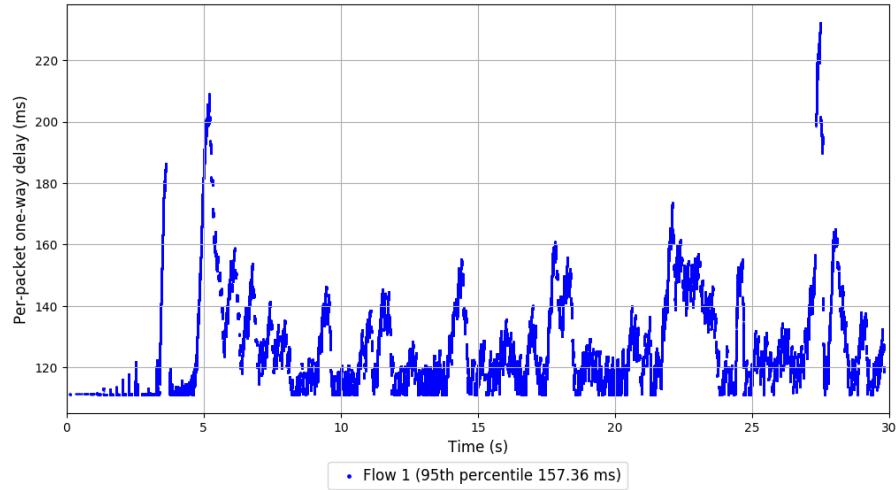
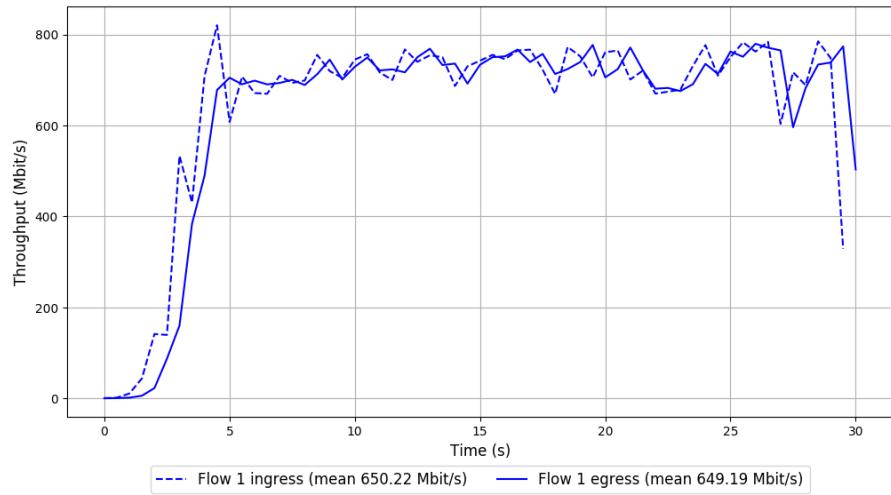


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-10-02 08:06:17
End at: 2018-10-02 08:06:47
Local clock offset: -0.115 ms
Remote clock offset: -0.427 ms

# Below is generated by plot.py at 2018-10-02 10:14:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 649.19 Mbit/s
95th percentile per-packet one-way delay: 157.361 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 649.19 Mbit/s
95th percentile per-packet one-way delay: 157.361 ms
Loss rate: 0.16%
```

Run 3: Report of Indigo-Muses — Data Link

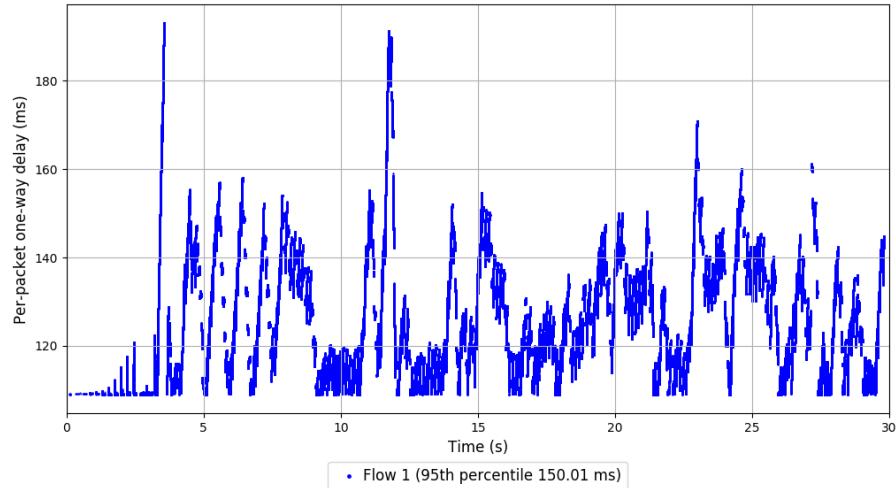
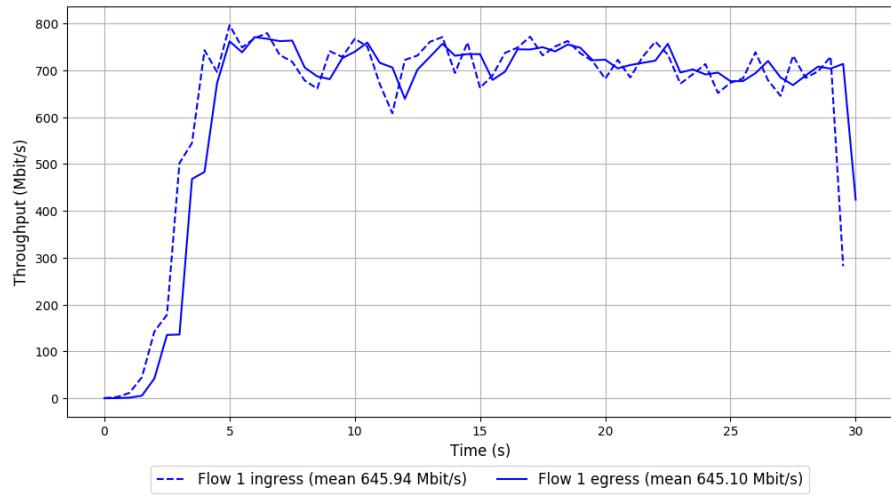


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-10-02 08:32:49
End at: 2018-10-02 08:33:19
Local clock offset: 1.282 ms
Remote clock offset: 0.309 ms

# Below is generated by plot.py at 2018-10-02 10:14:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 645.10 Mbit/s
95th percentile per-packet one-way delay: 150.006 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 645.10 Mbit/s
95th percentile per-packet one-way delay: 150.006 ms
Loss rate: 0.10%
```

Run 4: Report of Indigo-Muses — Data Link

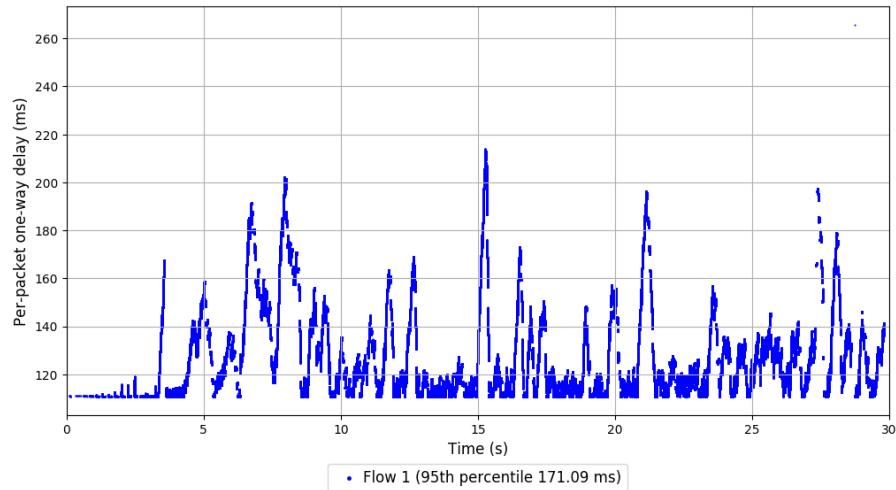
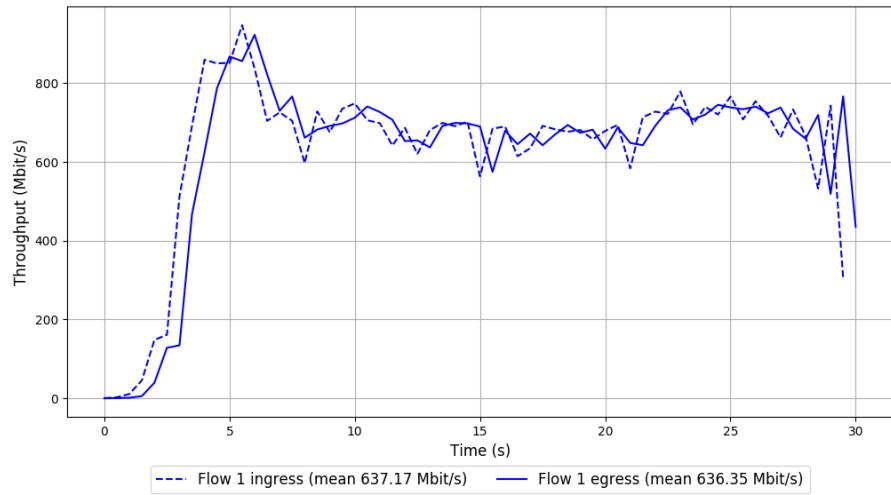


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-10-02 08:59:21
End at: 2018-10-02 08:59:51
Local clock offset: 0.645 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2018-10-02 10:14:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 636.35 Mbit/s
95th percentile per-packet one-way delay: 171.089 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 636.35 Mbit/s
95th percentile per-packet one-way delay: 171.089 ms
Loss rate: 0.13%
```

Run 5: Report of Indigo-Muses — Data Link

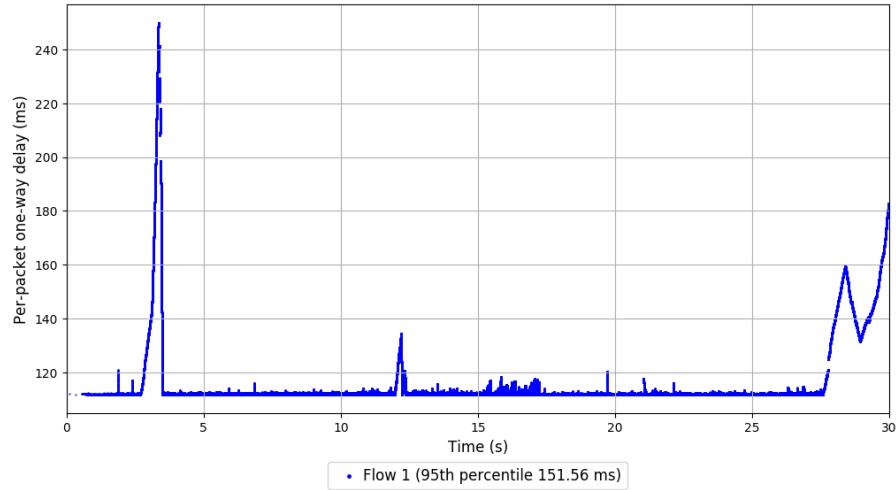
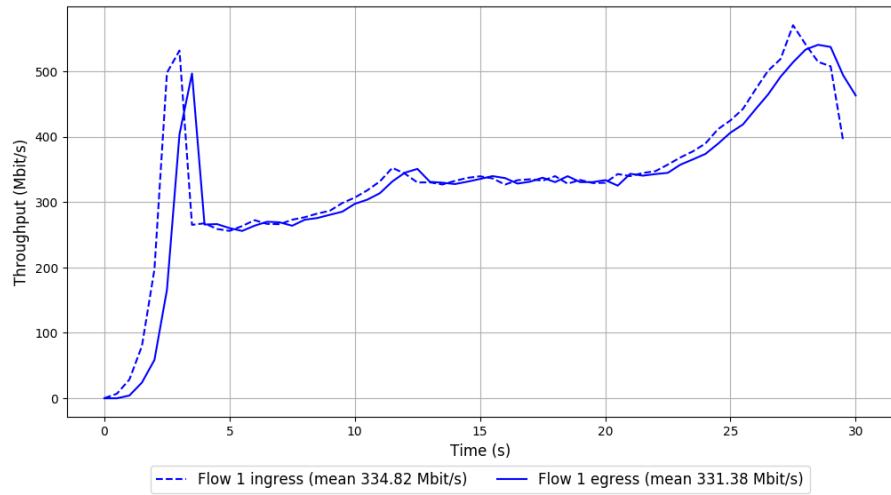


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-10-02 07:32:15
End at: 2018-10-02 07:32:45
Local clock offset: -0.379 ms
Remote clock offset: -0.152 ms

# Below is generated by plot.py at 2018-10-02 10:15:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 331.38 Mbit/s
95th percentile per-packet one-way delay: 151.557 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 331.38 Mbit/s
95th percentile per-packet one-way delay: 151.557 ms
Loss rate: 1.05%
```

Run 1: Report of PCC-Allegro — Data Link

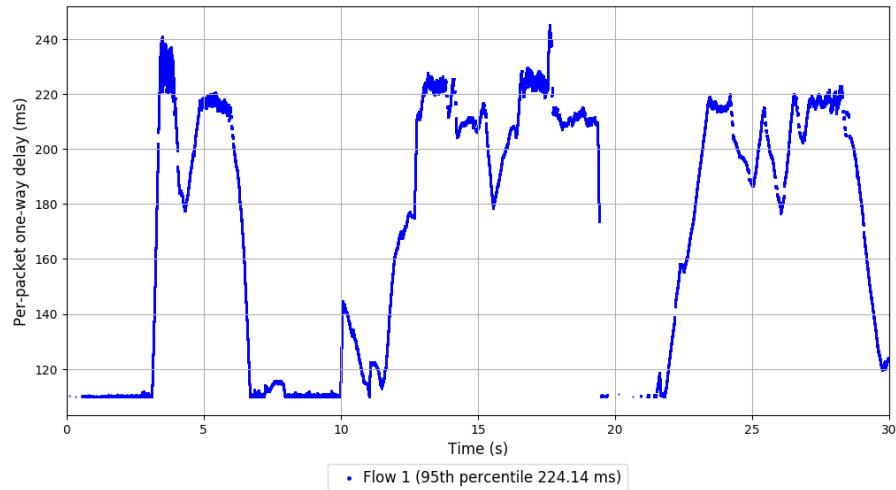
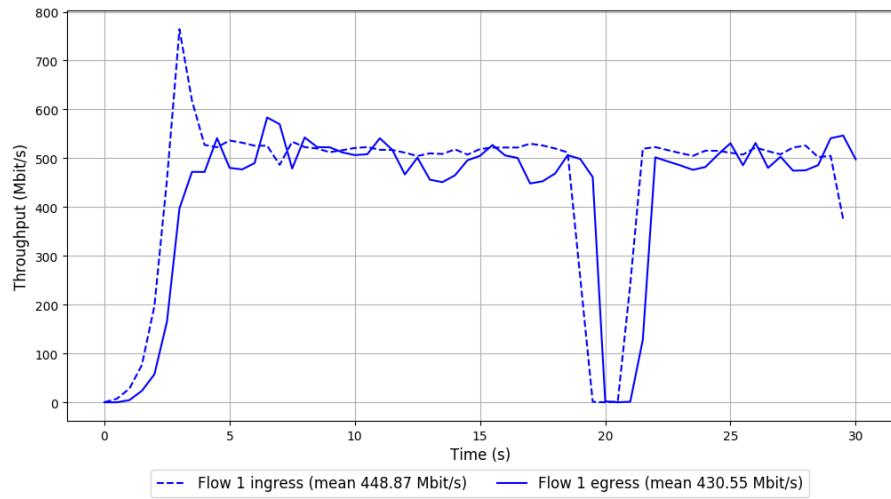


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-10-02 07:58:14
End at: 2018-10-02 07:58:44
Local clock offset: -0.01 ms
Remote clock offset: -0.162 ms

# Below is generated by plot.py at 2018-10-02 10:19:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 430.55 Mbit/s
95th percentile per-packet one-way delay: 224.139 ms
Loss rate: 4.08%
-- Flow 1:
Average throughput: 430.55 Mbit/s
95th percentile per-packet one-way delay: 224.139 ms
Loss rate: 4.08%
```

Run 2: Report of PCC-Allegro — Data Link

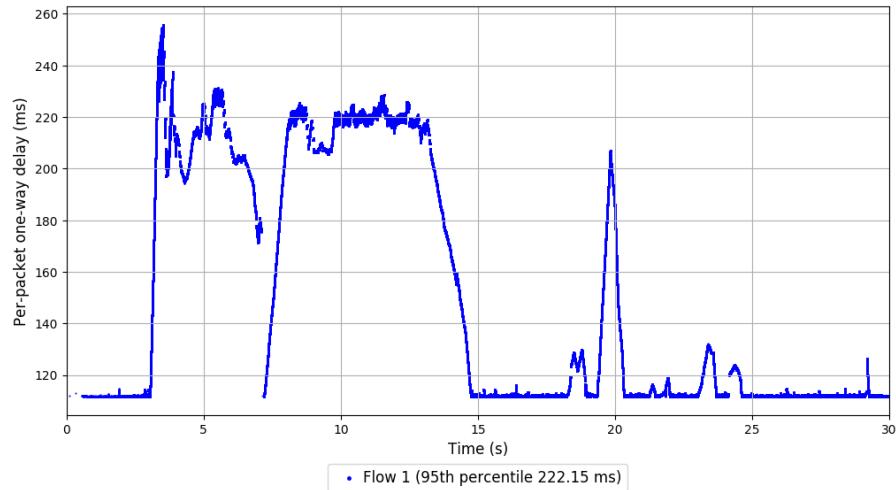
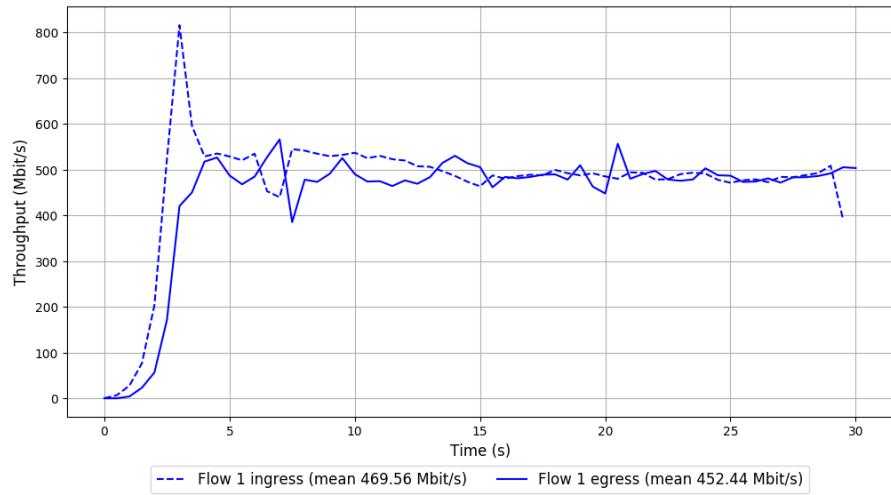


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-10-02 08:24:47
End at: 2018-10-02 08:25:17
Local clock offset: -0.702 ms
Remote clock offset: -0.075 ms

# Below is generated by plot.py at 2018-10-02 10:23:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 452.44 Mbit/s
95th percentile per-packet one-way delay: 222.148 ms
Loss rate: 3.65%
-- Flow 1:
Average throughput: 452.44 Mbit/s
95th percentile per-packet one-way delay: 222.148 ms
Loss rate: 3.65%
```

Run 3: Report of PCC-Allegro — Data Link

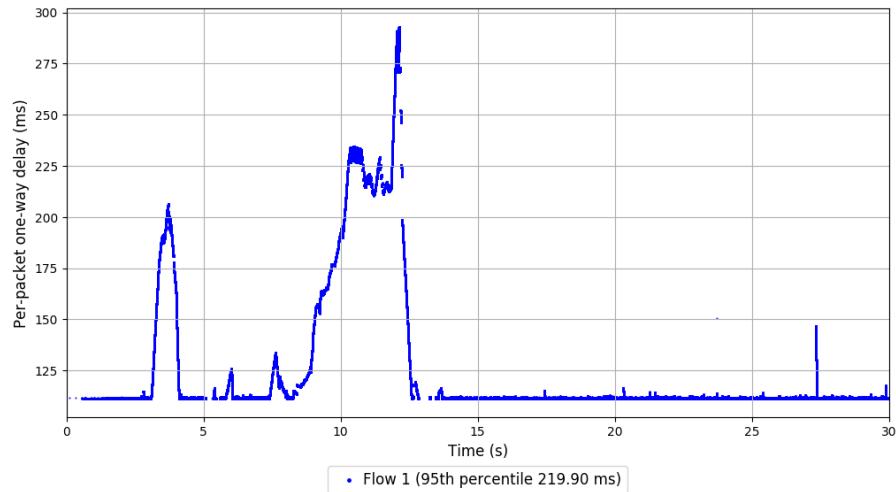
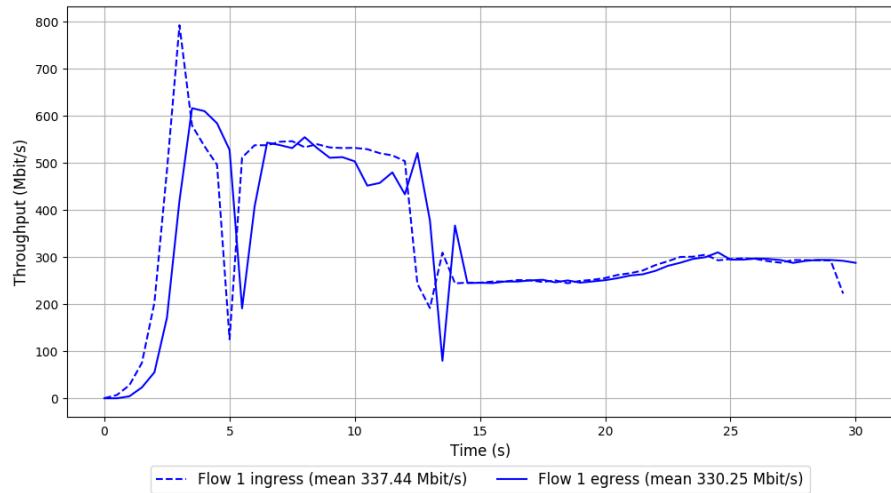


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-10-02 08:51:23
End at: 2018-10-02 08:51:53
Local clock offset: -0.268 ms
Remote clock offset: 0.276 ms

# Below is generated by plot.py at 2018-10-02 10:25:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 330.25 Mbit/s
95th percentile per-packet one-way delay: 219.899 ms
Loss rate: 2.13%
-- Flow 1:
Average throughput: 330.25 Mbit/s
95th percentile per-packet one-way delay: 219.899 ms
Loss rate: 2.13%
```

Run 4: Report of PCC-Allegro — Data Link

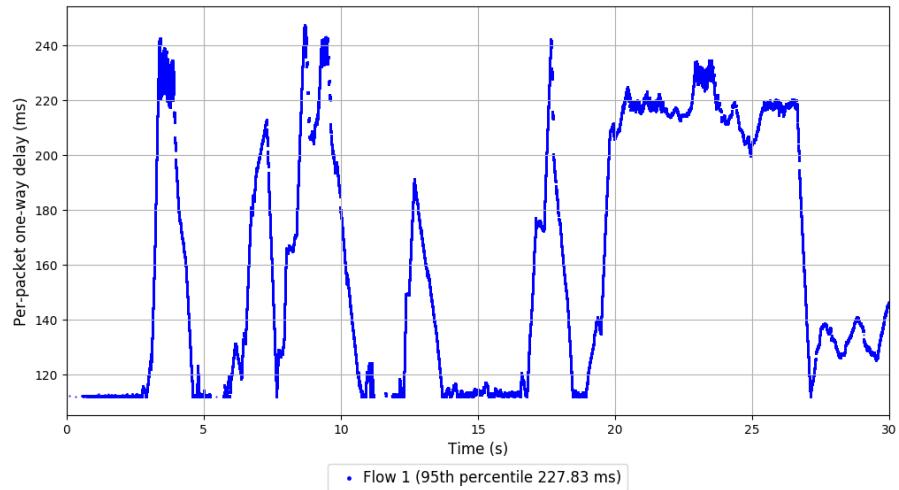
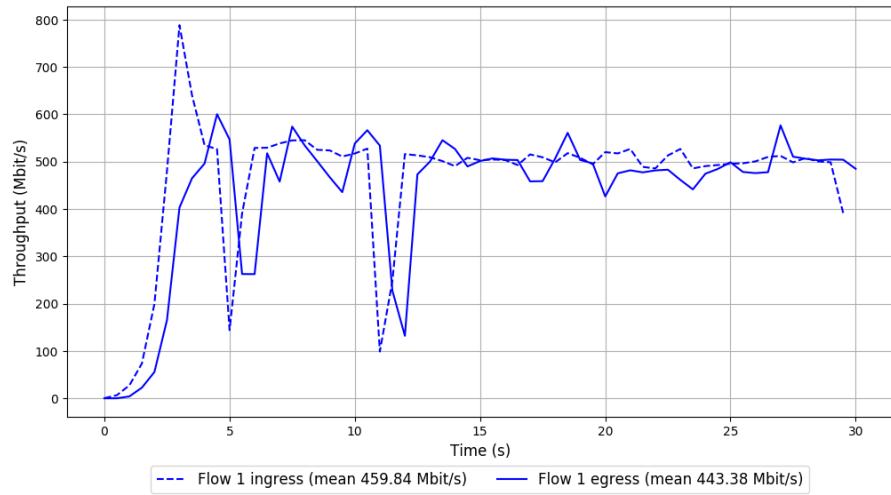


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-10-02 09:17:30
End at: 2018-10-02 09:18:00
Local clock offset: -0.614 ms
Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2018-10-02 10:29:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 443.38 Mbit/s
95th percentile per-packet one-way delay: 227.834 ms
Loss rate: 3.58%
-- Flow 1:
Average throughput: 443.38 Mbit/s
95th percentile per-packet one-way delay: 227.834 ms
Loss rate: 3.58%
```

Run 5: Report of PCC-Allegro — Data Link

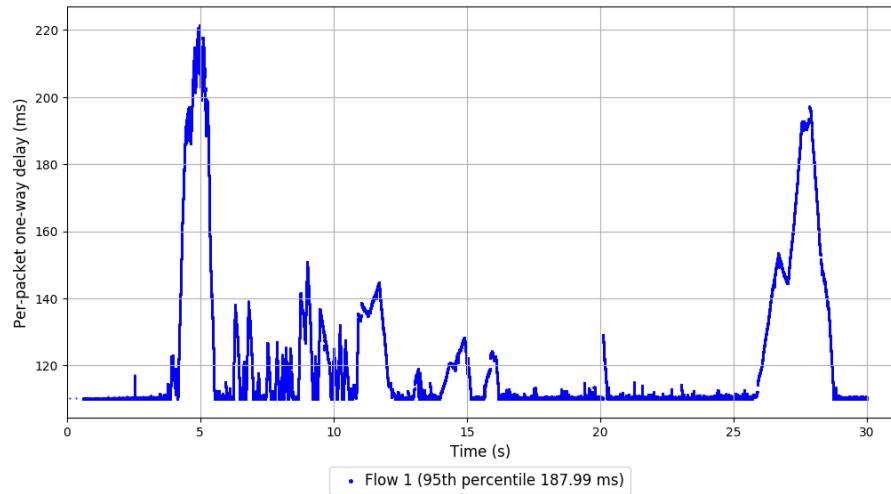
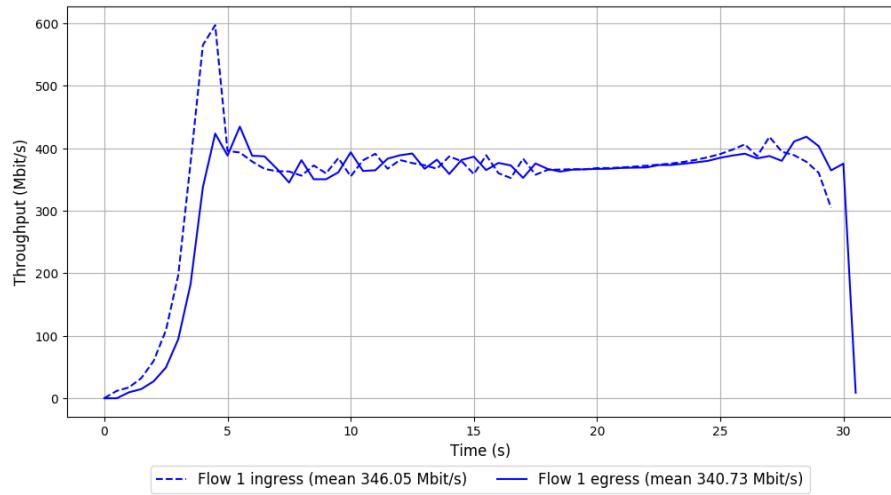


Run 1: Statistics of PCC-Expr

```
Start at: 2018-10-02 07:12:13
End at: 2018-10-02 07:12:43
Local clock offset: 0.554 ms
Remote clock offset: -0.448 ms

# Below is generated by plot.py at 2018-10-02 10:29:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 340.73 Mbit/s
95th percentile per-packet one-way delay: 187.985 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 340.73 Mbit/s
95th percentile per-packet one-way delay: 187.985 ms
Loss rate: 1.54%
```

Run 1: Report of PCC-Expr — Data Link

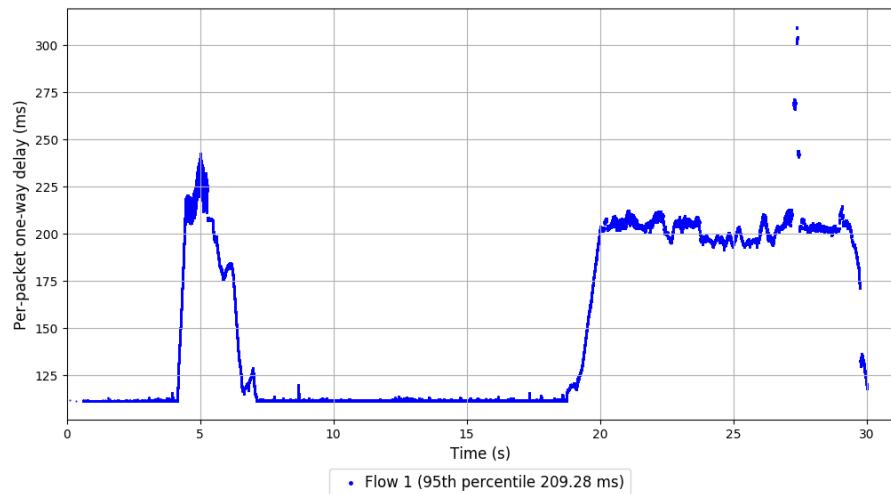
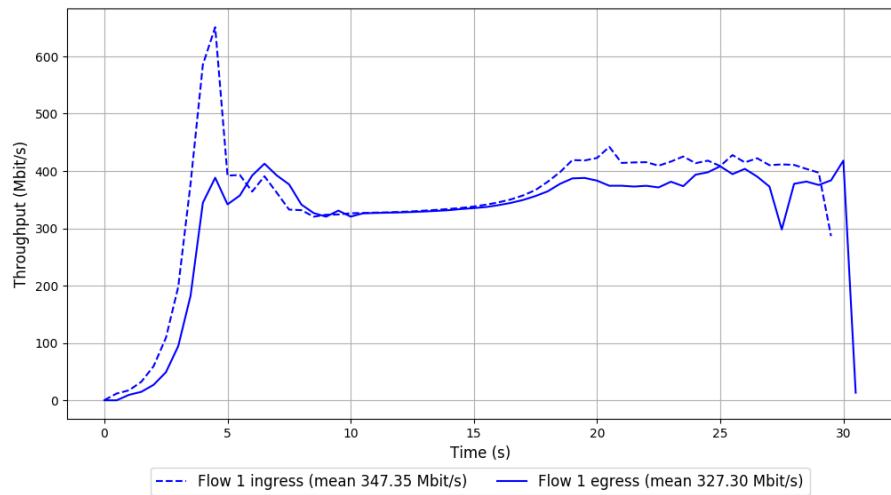


Run 2: Statistics of PCC-Expr

```
Start at: 2018-10-02 07:38:30
End at: 2018-10-02 07:39:00
Local clock offset: -0.171 ms
Remote clock offset: -0.146 ms

# Below is generated by plot.py at 2018-10-02 10:29:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 327.30 Mbit/s
95th percentile per-packet one-way delay: 209.285 ms
Loss rate: 5.77%
-- Flow 1:
Average throughput: 327.30 Mbit/s
95th percentile per-packet one-way delay: 209.285 ms
Loss rate: 5.77%
```

Run 2: Report of PCC-Expr — Data Link

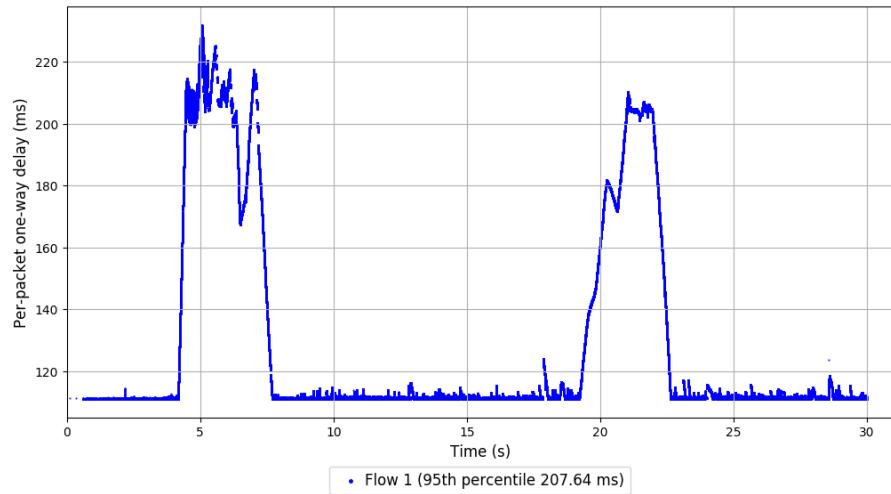
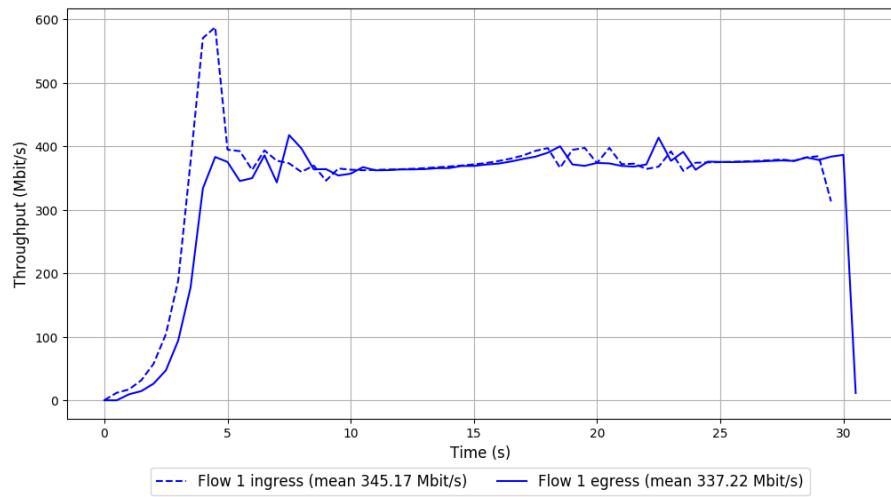


Run 3: Statistics of PCC-Expr

```
Start at: 2018-10-02 08:04:35
End at: 2018-10-02 08:05:05
Local clock offset: -0.087 ms
Remote clock offset: -0.464 ms

# Below is generated by plot.py at 2018-10-02 10:29:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 337.22 Mbit/s
95th percentile per-packet one-way delay: 207.637 ms
Loss rate: 2.31%
-- Flow 1:
Average throughput: 337.22 Mbit/s
95th percentile per-packet one-way delay: 207.637 ms
Loss rate: 2.31%
```

Run 3: Report of PCC-Expr — Data Link

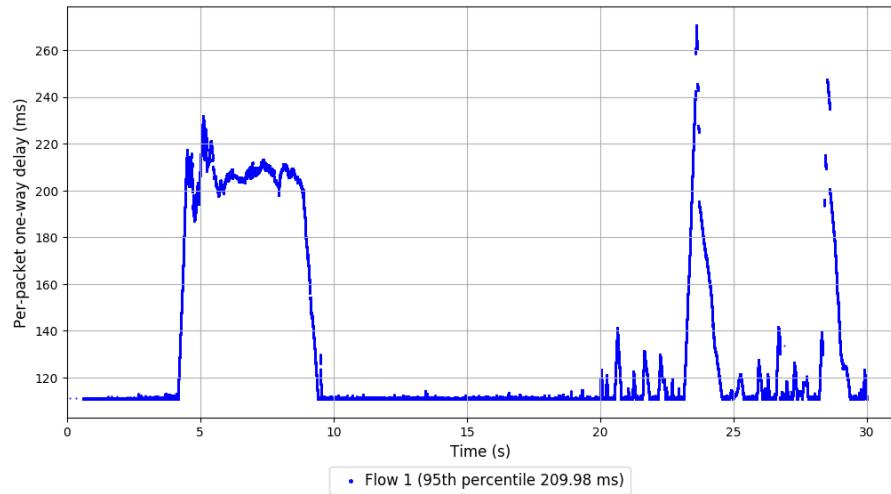
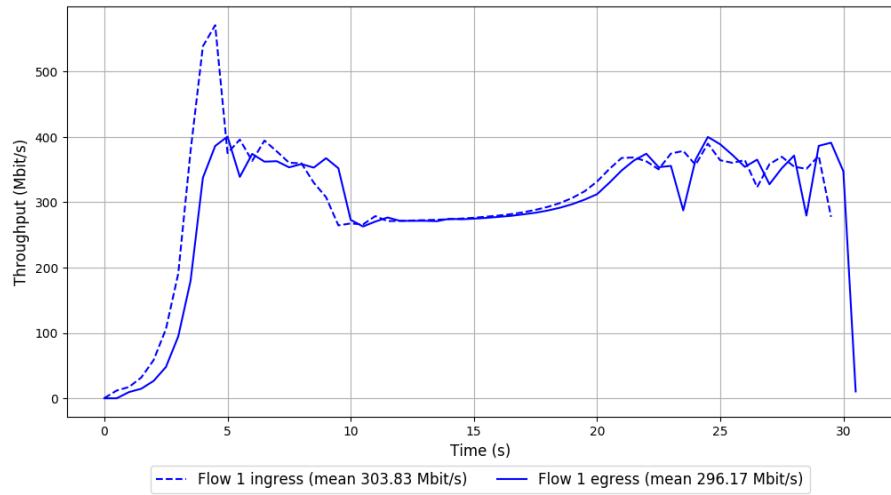


Run 4: Statistics of PCC-Expr

```
Start at: 2018-10-02 08:31:11
End at: 2018-10-02 08:31:41
Local clock offset: 0.694 ms
Remote clock offset: 0.306 ms

# Below is generated by plot.py at 2018-10-02 10:29:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 296.17 Mbit/s
95th percentile per-packet one-way delay: 209.977 ms
Loss rate: 2.52%
-- Flow 1:
Average throughput: 296.17 Mbit/s
95th percentile per-packet one-way delay: 209.977 ms
Loss rate: 2.52%
```

Run 4: Report of PCC-Expr — Data Link

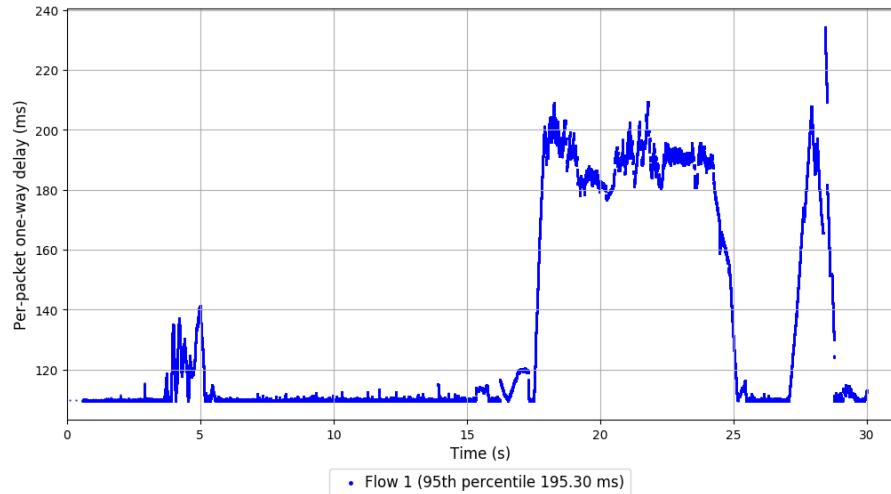
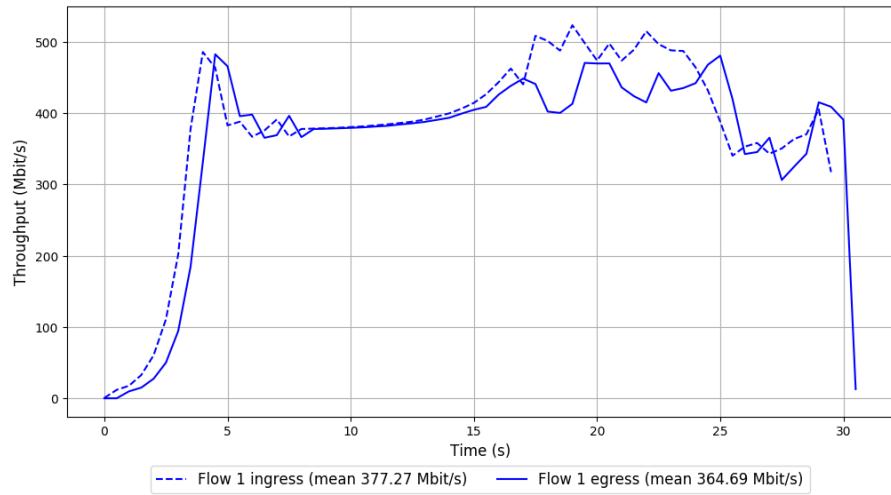


Run 5: Statistics of PCC-Expr

```
Start at: 2018-10-02 08:57:36
End at: 2018-10-02 08:58:06
Local clock offset: 0.519 ms
Remote clock offset: 0.259 ms

# Below is generated by plot.py at 2018-10-02 10:32:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 364.69 Mbit/s
95th percentile per-packet one-way delay: 195.300 ms
Loss rate: 3.33%
-- Flow 1:
Average throughput: 364.69 Mbit/s
95th percentile per-packet one-way delay: 195.300 ms
Loss rate: 3.33%
```

Run 5: Report of PCC-Expr — Data Link

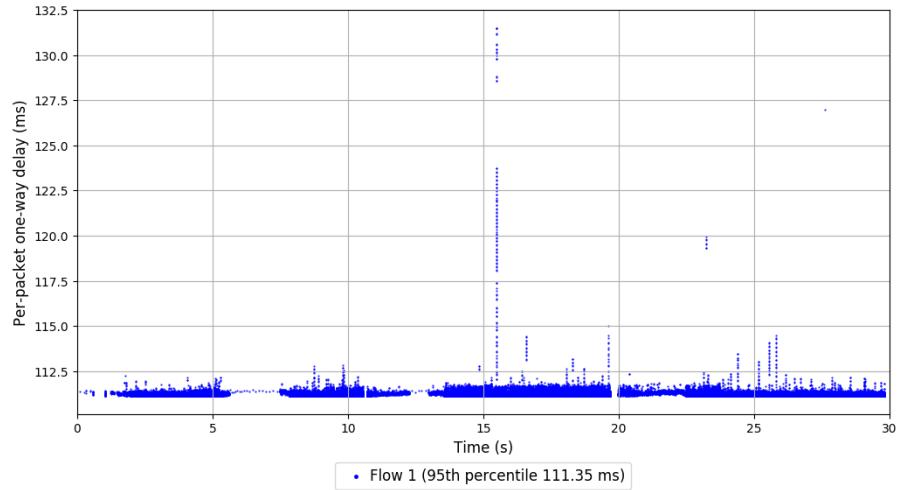
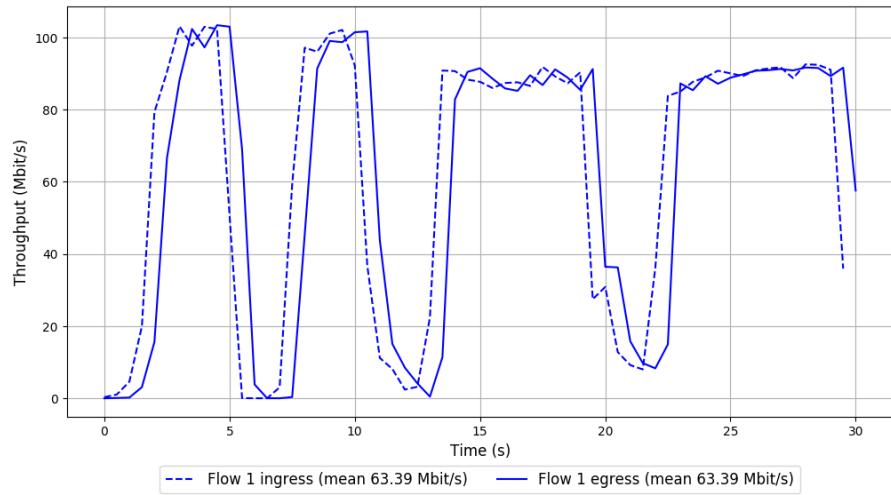


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-10-02 07:17:56
End at: 2018-10-02 07:18:26
Local clock offset: -0.11 ms
Remote clock offset: 0.249 ms

# Below is generated by plot.py at 2018-10-02 10:32:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.39 Mbit/s
95th percentile per-packet one-way delay: 111.349 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 63.39 Mbit/s
95th percentile per-packet one-way delay: 111.349 ms
Loss rate: 0.00%
```

Run 1: Report of QUIC Cubic — Data Link

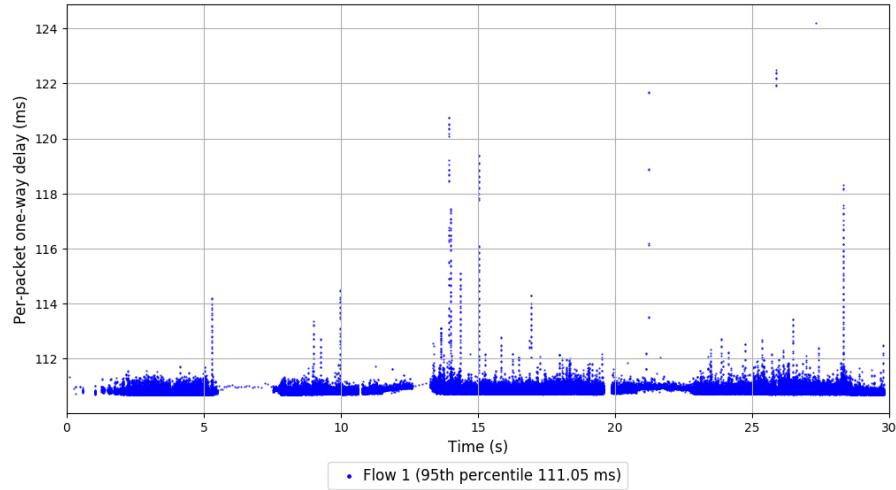
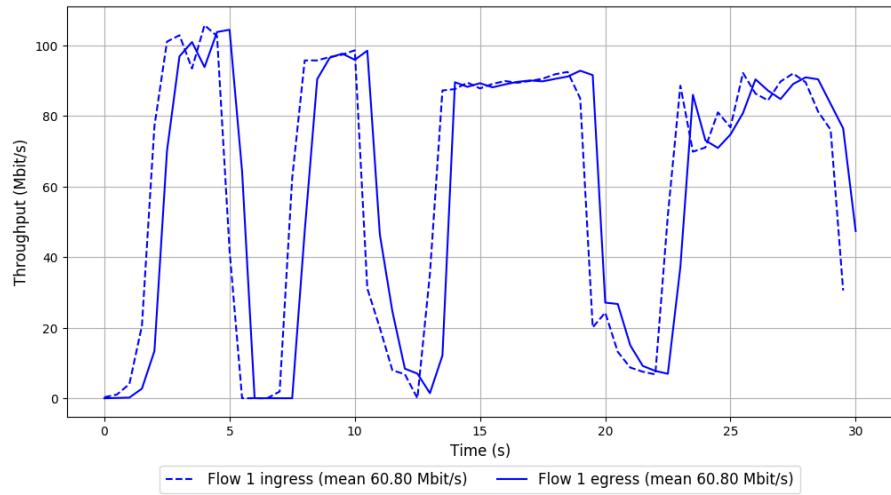


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-10-02 07:44:12
End at: 2018-10-02 07:44:42
Local clock offset: 0.249 ms
Remote clock offset: -0.602 ms

# Below is generated by plot.py at 2018-10-02 10:32:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.80 Mbit/s
95th percentile per-packet one-way delay: 111.048 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.80 Mbit/s
95th percentile per-packet one-way delay: 111.048 ms
Loss rate: 0.00%
```

Run 2: Report of QUIC Cubic — Data Link

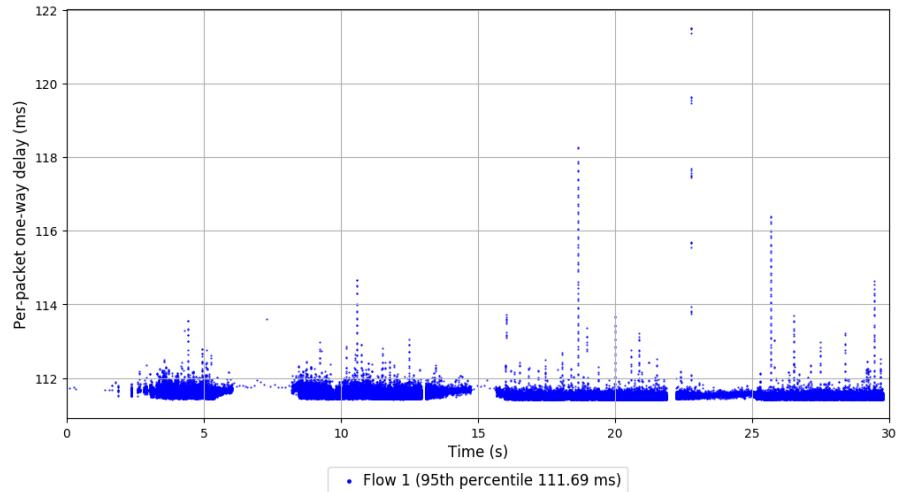
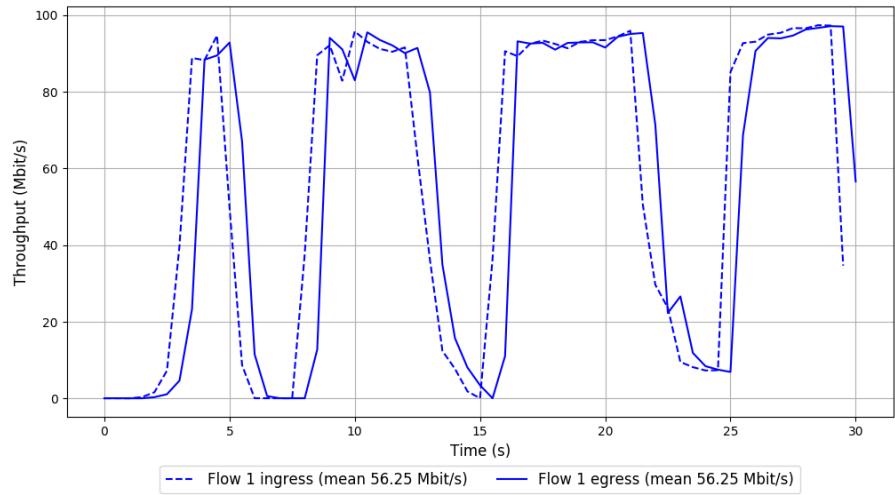


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-10-02 08:10:21
End at: 2018-10-02 08:10:51
Local clock offset: -0.117 ms
Remote clock offset: -0.109 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.25 Mbit/s
95th percentile per-packet one-way delay: 111.695 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.25 Mbit/s
95th percentile per-packet one-way delay: 111.695 ms
Loss rate: 0.00%
```

Run 3: Report of QUIC Cubic — Data Link

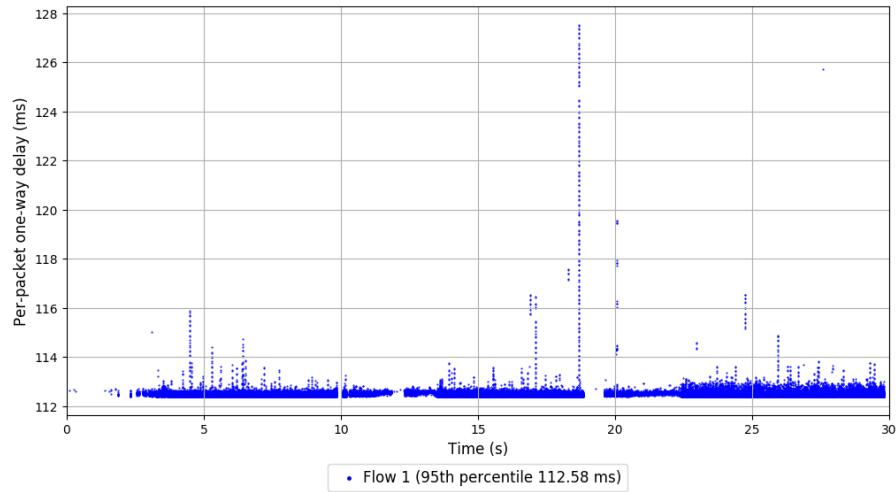
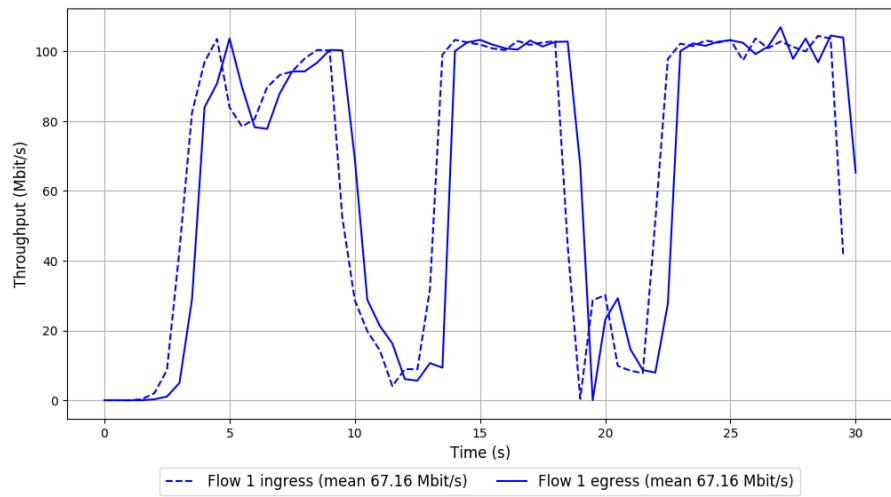


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-10-02 08:36:51
End at: 2018-10-02 08:37:21
Local clock offset: -1.399 ms
Remote clock offset: -0.096 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.16 Mbit/s
95th percentile per-packet one-way delay: 112.581 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 67.16 Mbit/s
95th percentile per-packet one-way delay: 112.581 ms
Loss rate: 0.00%
```

Run 4: Report of QUIC Cubic — Data Link

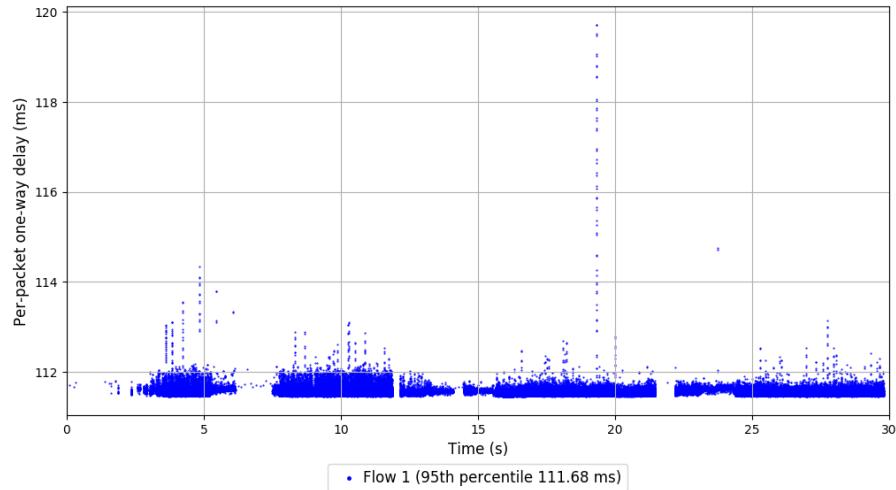
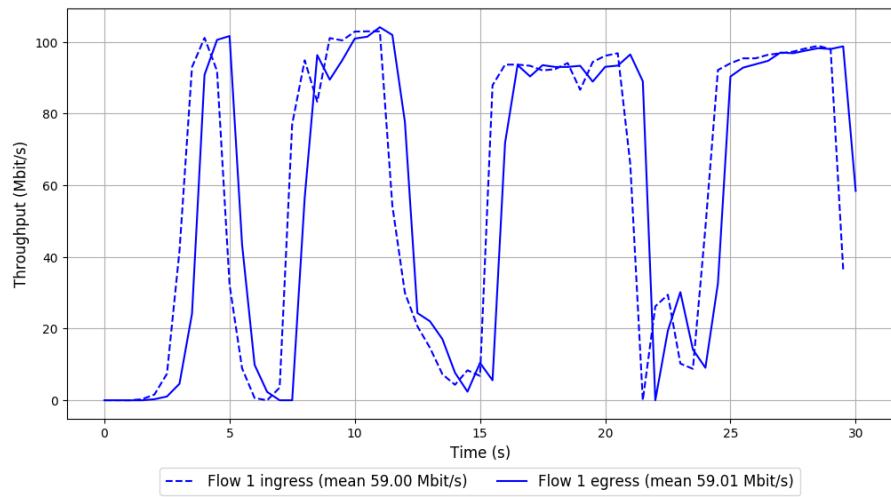


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-10-02 09:03:23
End at: 2018-10-02 09:03:53
Local clock offset: -0.722 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.01 Mbit/s
95th percentile per-packet one-way delay: 111.680 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 59.01 Mbit/s
95th percentile per-packet one-way delay: 111.680 ms
Loss rate: 0.00%
```

Run 5: Report of QUIC Cubic — Data Link

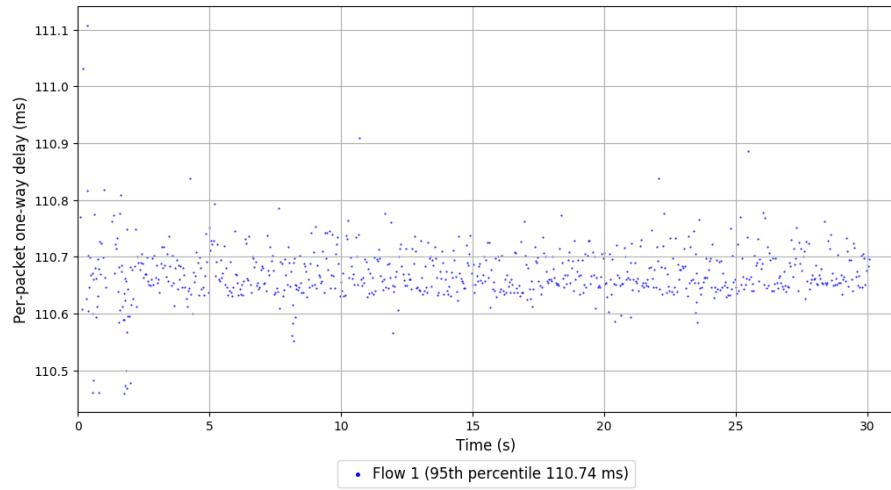
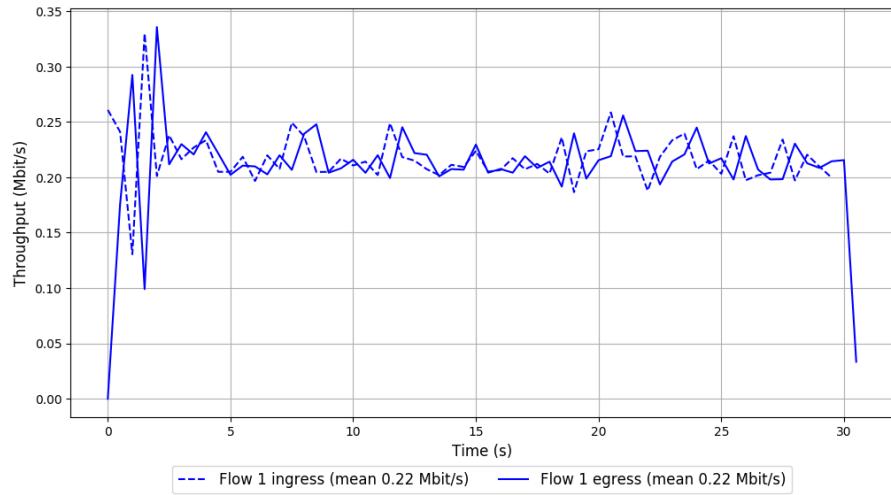


Run 1: Statistics of SCReAM

```
Start at: 2018-10-02 07:21:52
End at: 2018-10-02 07:22:22
Local clock offset: -0.136 ms
Remote clock offset: 0.295 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.742 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.742 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

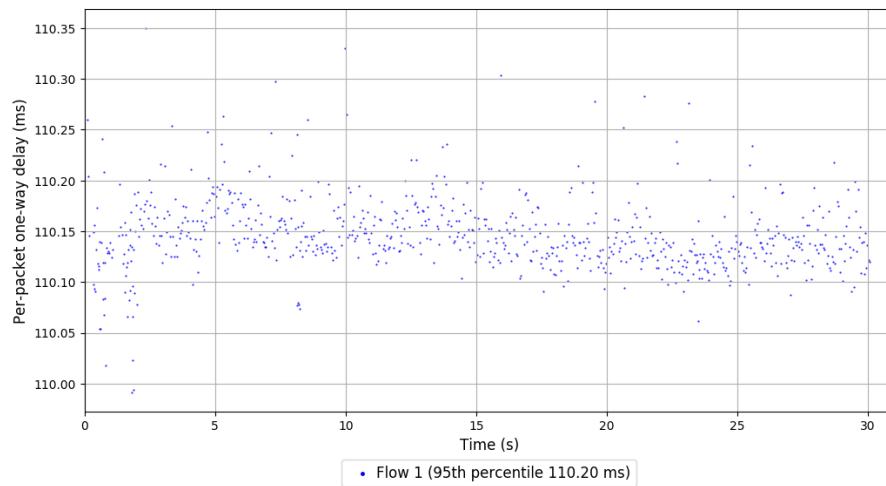
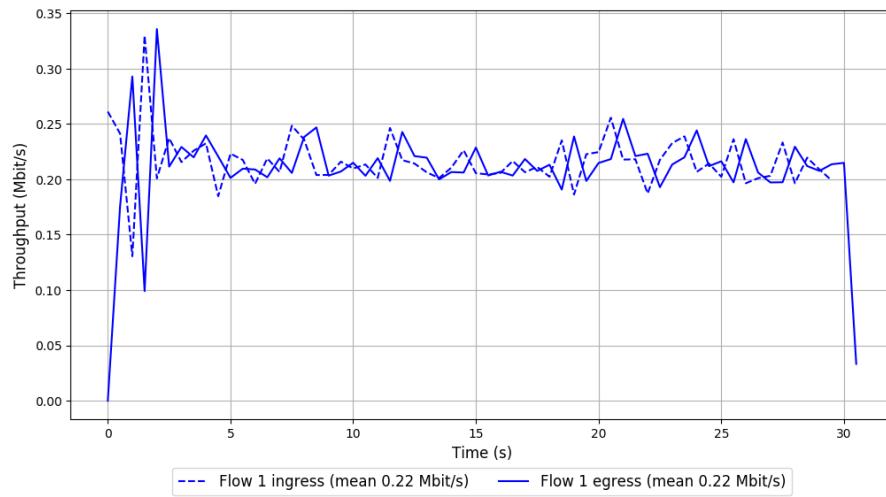


Run 2: Statistics of SCReAM

```
Start at: 2018-10-02 07:48:10
End at: 2018-10-02 07:48:40
Local clock offset: 0.021 ms
Remote clock offset: -0.18 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.204 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.204 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

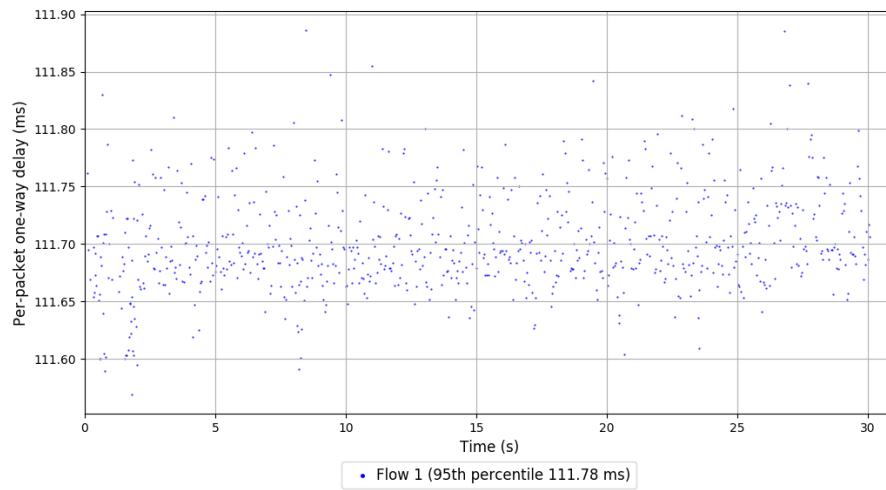
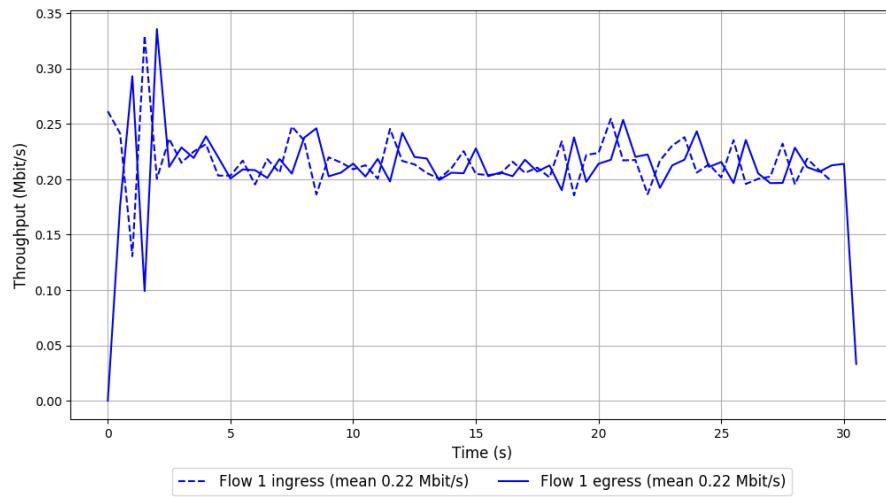


Run 3: Statistics of SCReAM

```
Start at: 2018-10-02 08:14:25
End at: 2018-10-02 08:14:55
Local clock offset: -0.065 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 111.779 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 111.779 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

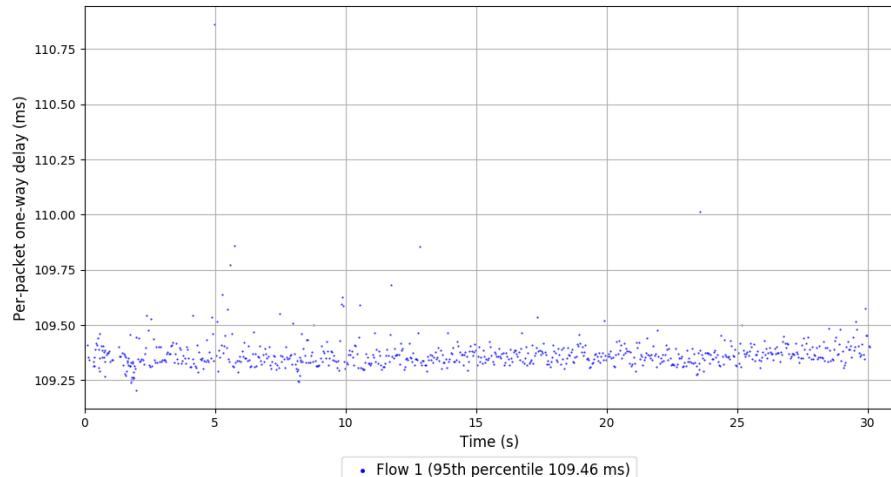
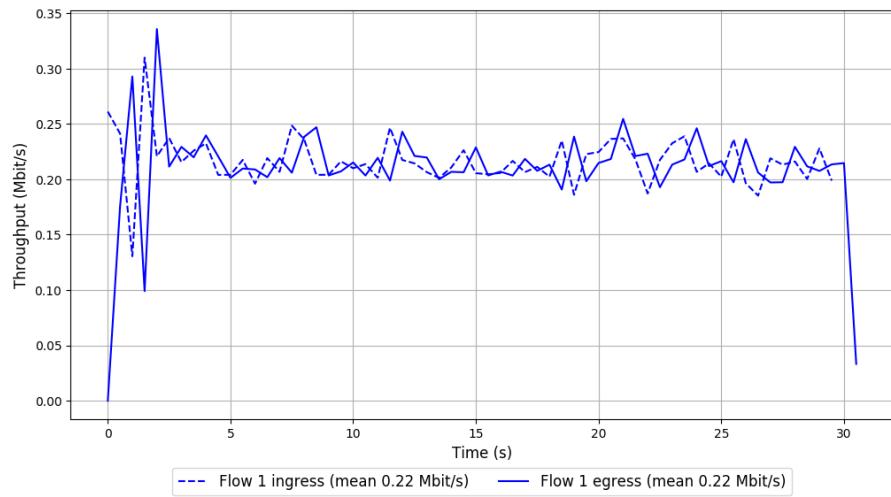


Run 4: Statistics of SCReAM

```
Start at: 2018-10-02 08:40:56
End at: 2018-10-02 08:41:26
Local clock offset: 0.011 ms
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.458 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.458 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

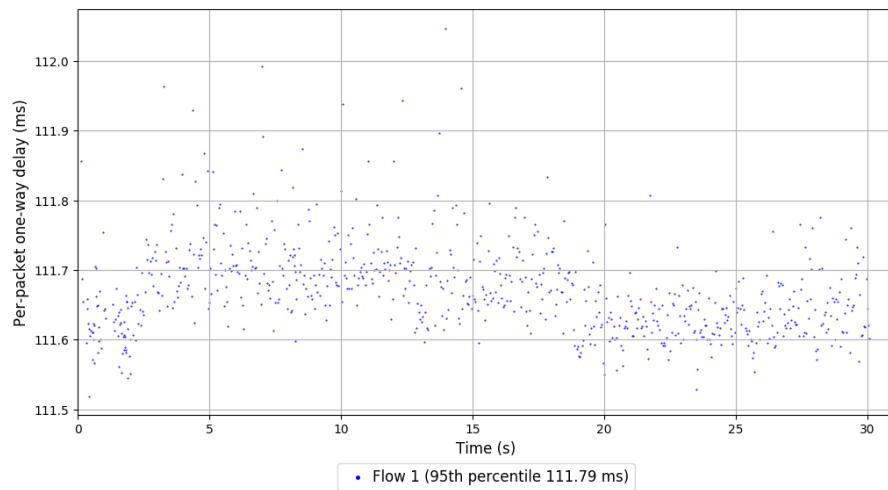
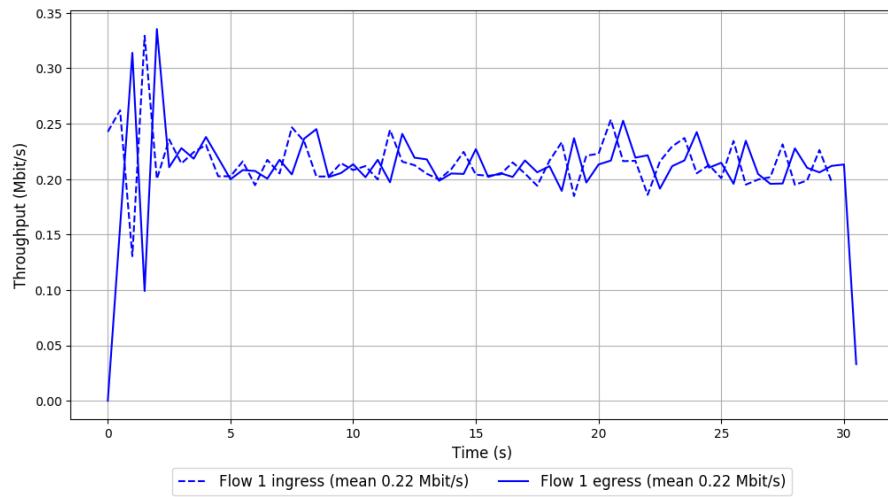


Run 5: Statistics of SCReAM

```
Start at: 2018-10-02 09:07:20
End at: 2018-10-02 09:07:50
Local clock offset: -0.342 ms
Remote clock offset: -0.375 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 111.786 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 111.786 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

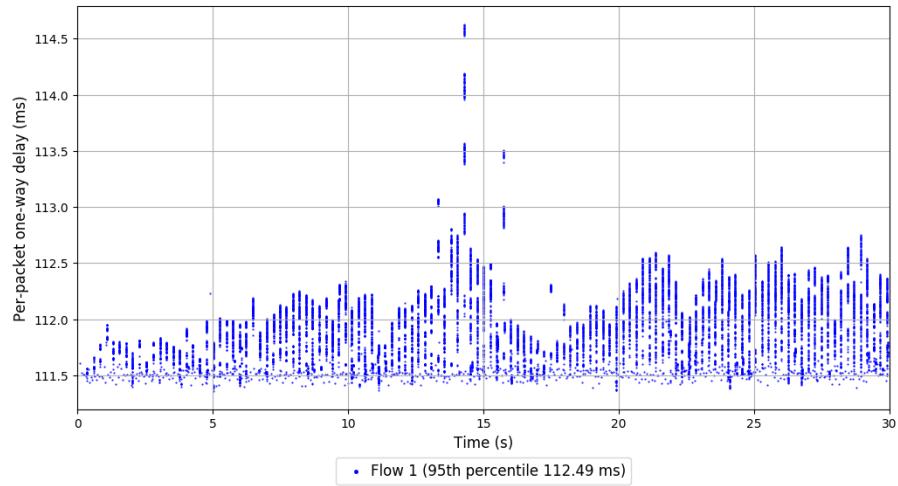
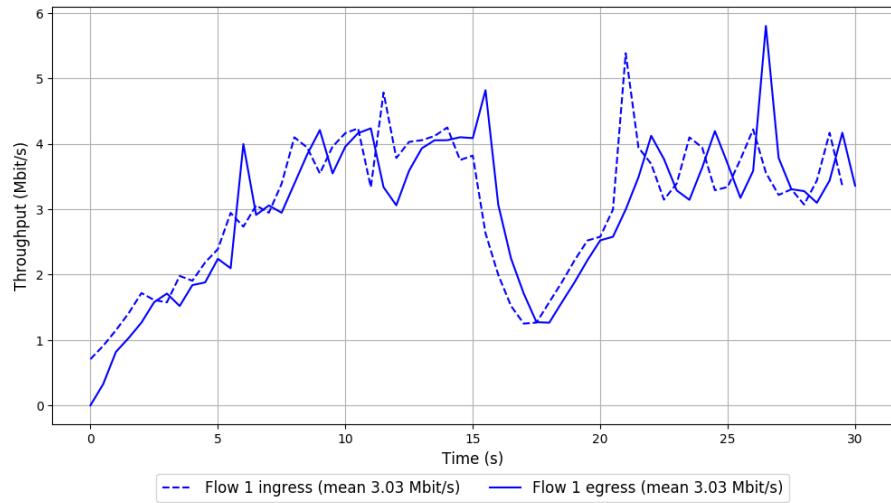


Run 1: Statistics of Sprout

```
Start at: 2018-10-02 07:16:47
End at: 2018-10-02 07:17:17
Local clock offset: -0.065 ms
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 112.486 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 112.486 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

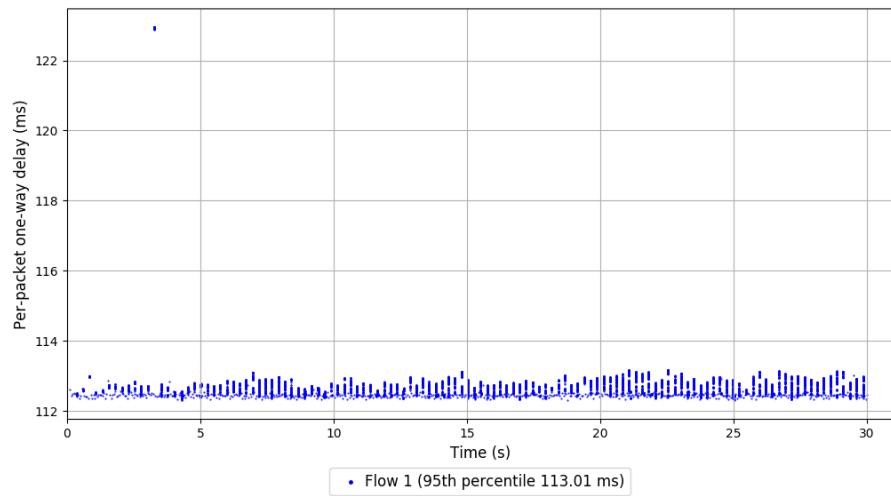
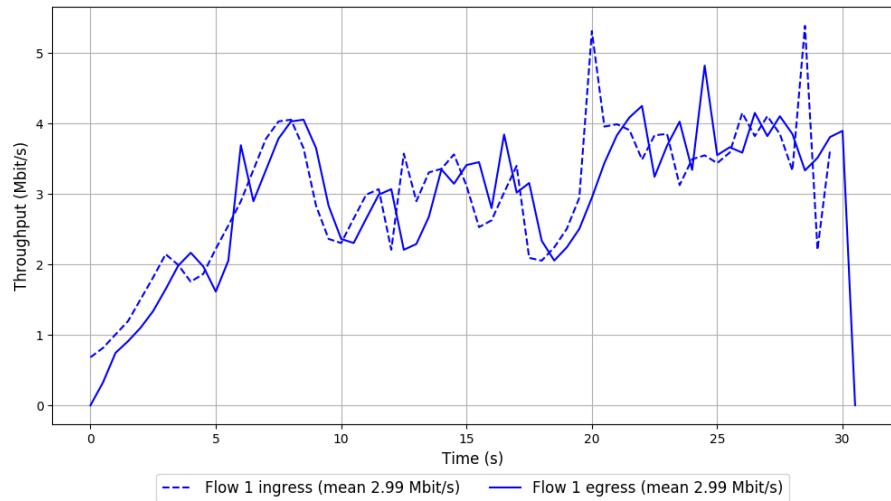


Run 2: Statistics of Sprout

```
Start at: 2018-10-02 07:43:03
End at: 2018-10-02 07:43:33
Local clock offset: -0.539 ms
Remote clock offset: 0.194 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 113.009 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 113.009 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

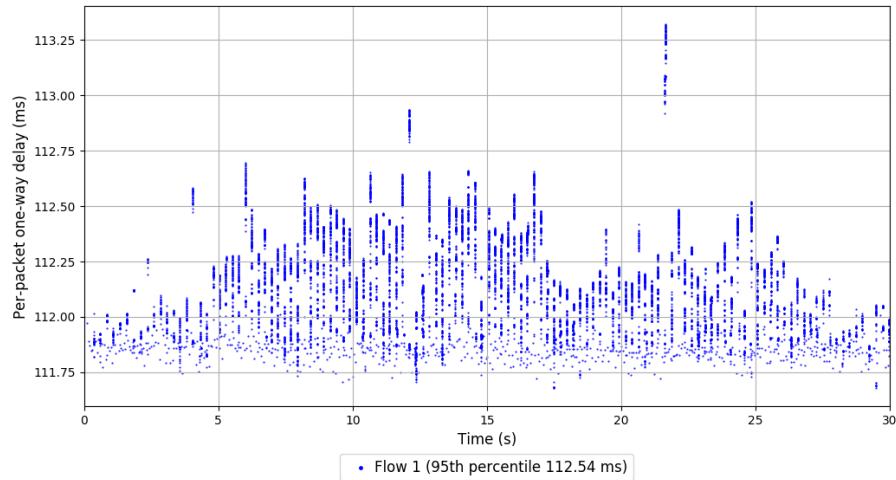
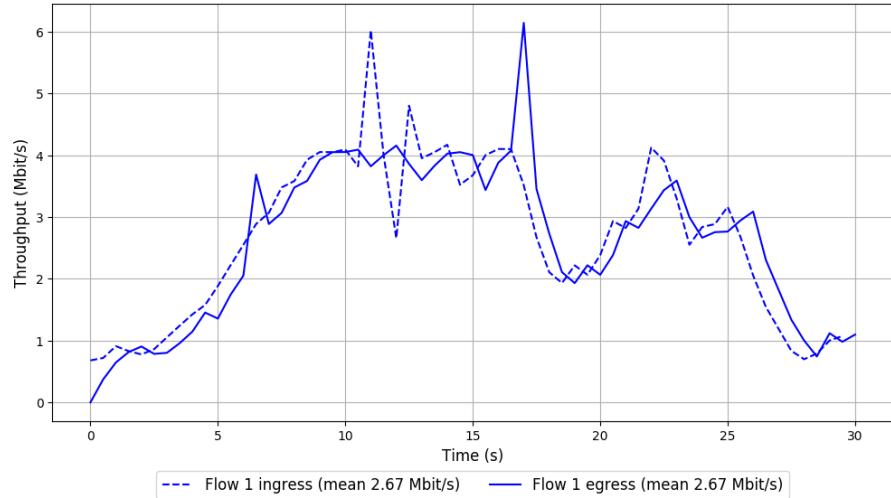


Run 3: Statistics of Sprout

```
Start at: 2018-10-02 08:09:11
End at: 2018-10-02 08:09:41
Local clock offset: -0.317 ms
Remote clock offset: -0.082 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.67 Mbit/s
95th percentile per-packet one-way delay: 112.536 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.67 Mbit/s
95th percentile per-packet one-way delay: 112.536 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

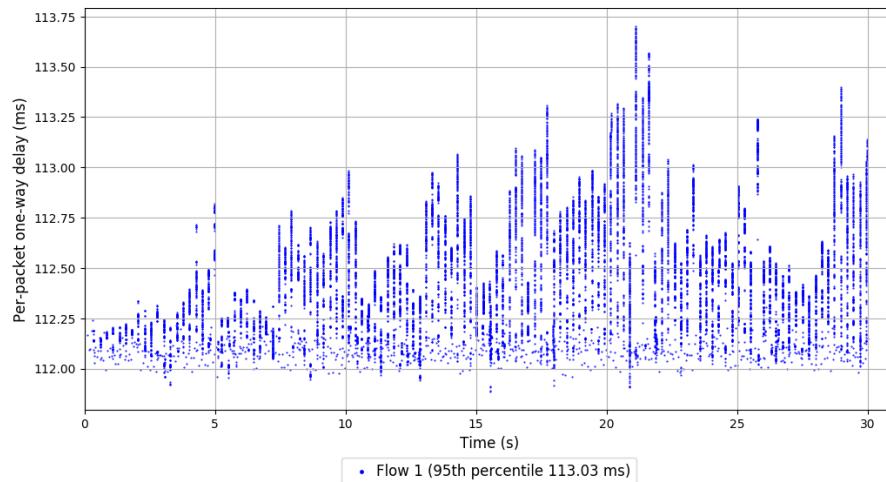
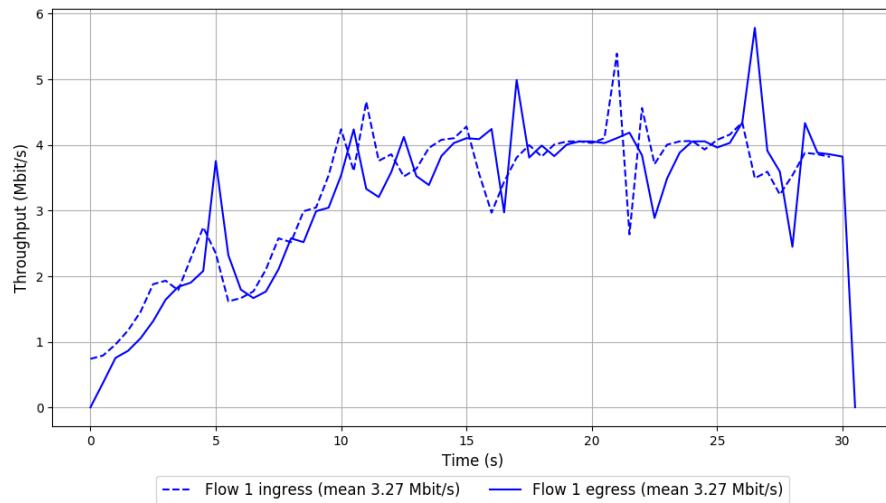


Run 4: Statistics of Sprout

```
Start at: 2018-10-02 08:35:41
End at: 2018-10-02 08:36:11
Local clock offset: -0.153 ms
Remote clock offset: 0.323 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 113.028 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 113.028 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

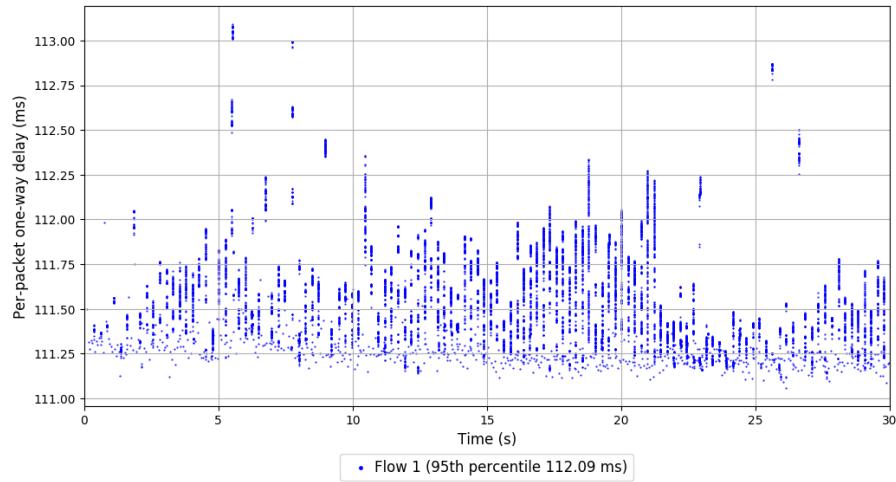
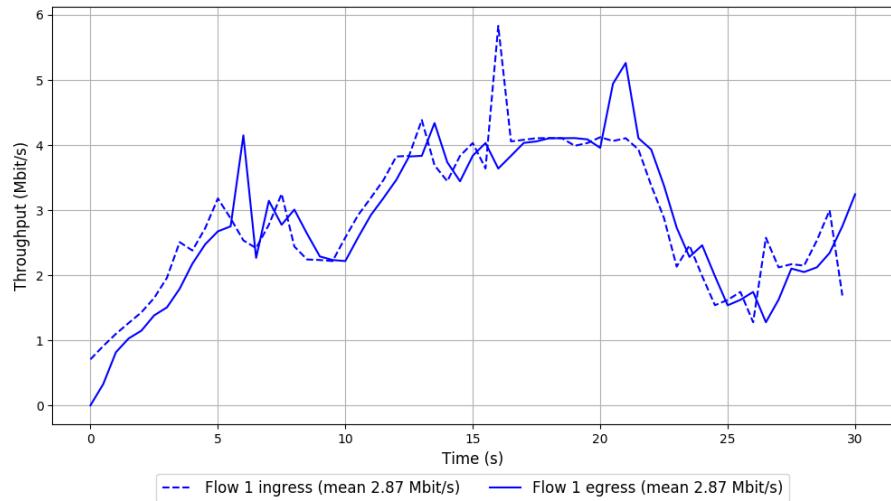


Run 5: Statistics of Sprout

```
Start at: 2018-10-02 09:02:13
End at: 2018-10-02 09:02:43
Local clock offset: -0.227 ms
Remote clock offset: -0.031 ms

# Below is generated by plot.py at 2018-10-02 10:32:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 112.087 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 112.087 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link

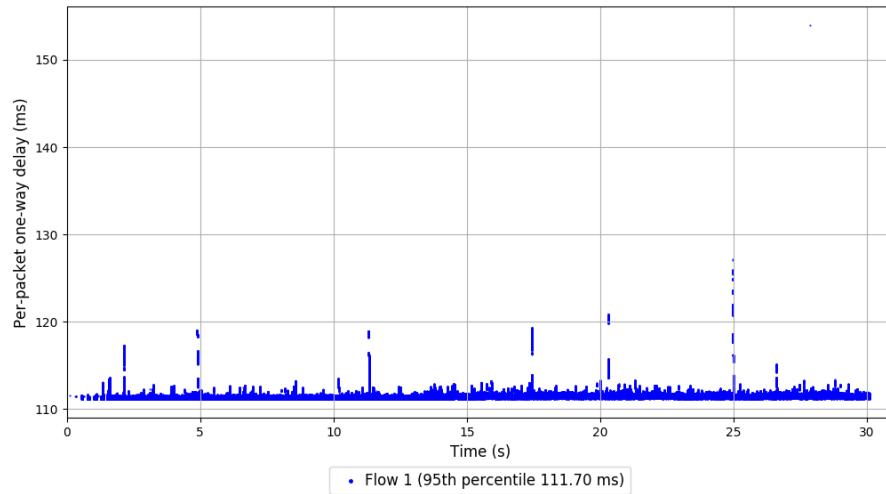
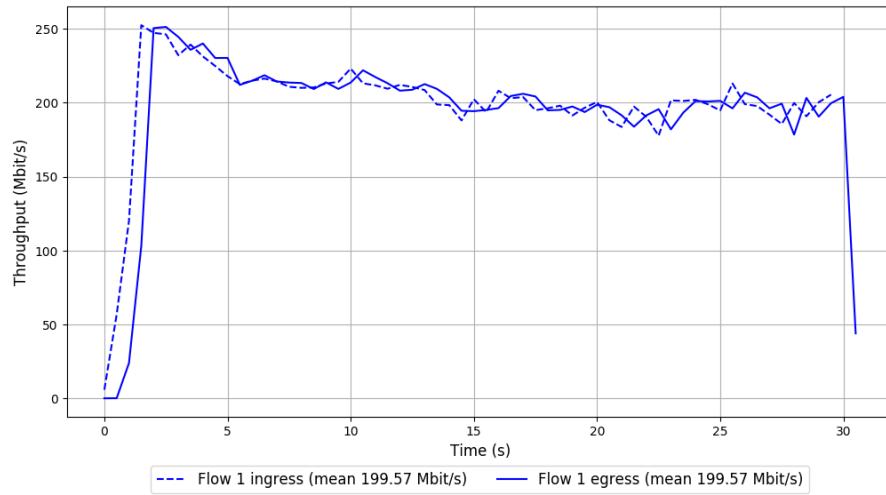


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-10-02 07:33:47
End at: 2018-10-02 07:34:17
Local clock offset: 0.062 ms
Remote clock offset: -0.171 ms

# Below is generated by plot.py at 2018-10-02 10:32:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 199.57 Mbit/s
95th percentile per-packet one-way delay: 111.698 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 199.57 Mbit/s
95th percentile per-packet one-way delay: 111.698 ms
Loss rate: 0.00%
```

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

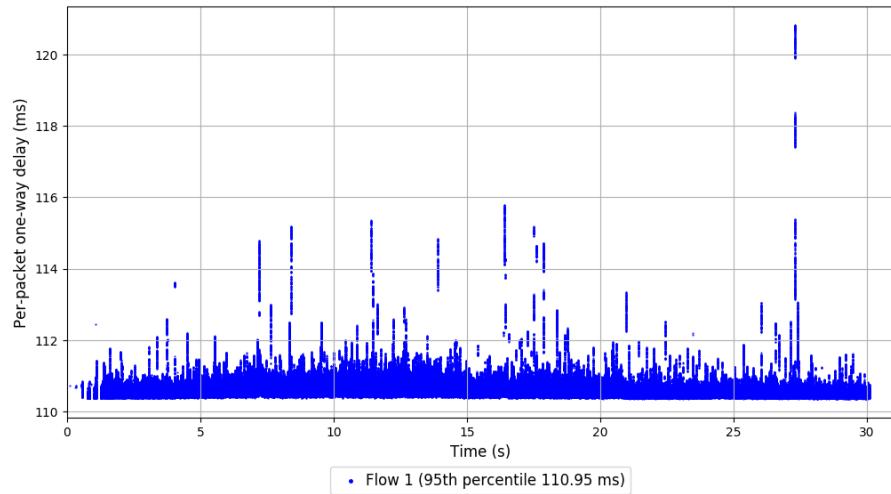
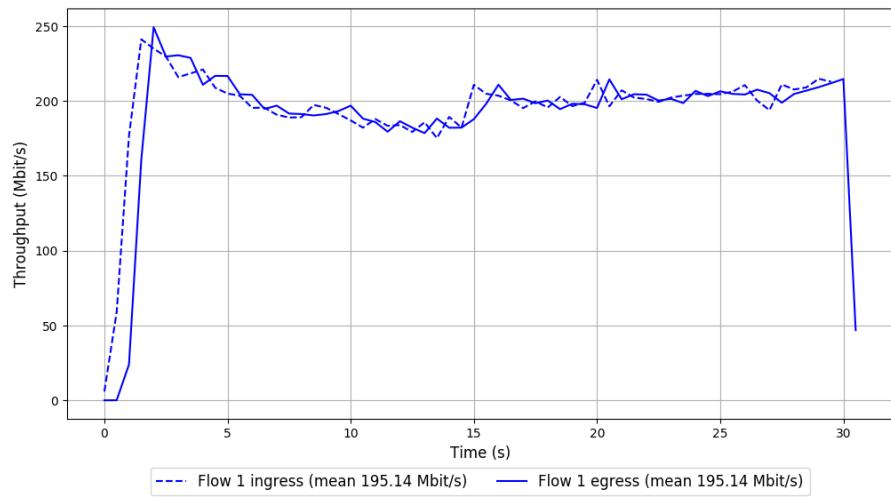


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-10-02 07:59:54
End at: 2018-10-02 08:00:24
Local clock offset: -0.786 ms
Remote clock offset: 0.248 ms

# Below is generated by plot.py at 2018-10-02 10:32:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 195.14 Mbit/s
95th percentile per-packet one-way delay: 110.950 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 195.14 Mbit/s
95th percentile per-packet one-way delay: 110.950 ms
Loss rate: 0.00%
```

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

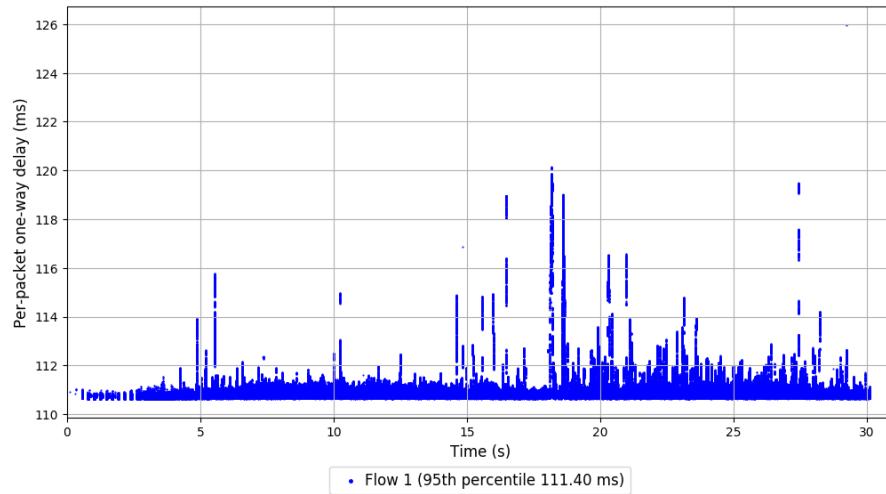
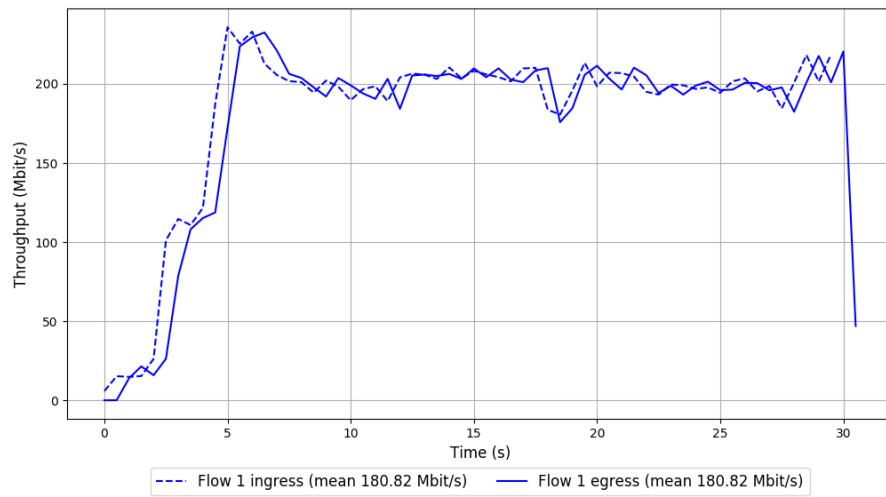


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-10-02 08:26:29
End at: 2018-10-02 08:26:59
Local clock offset: -0.3 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2018-10-02 10:32:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 180.82 Mbit/s
95th percentile per-packet one-way delay: 111.397 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 180.82 Mbit/s
95th percentile per-packet one-way delay: 111.397 ms
Loss rate: 0.00%
```

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

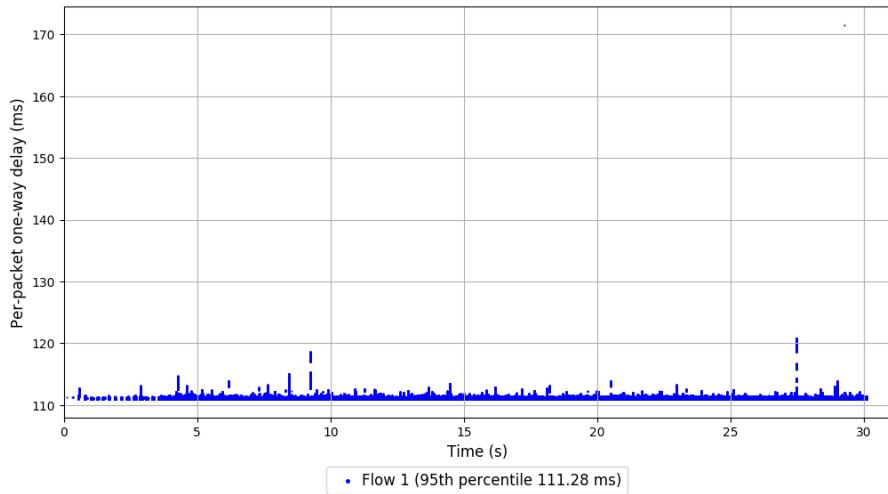
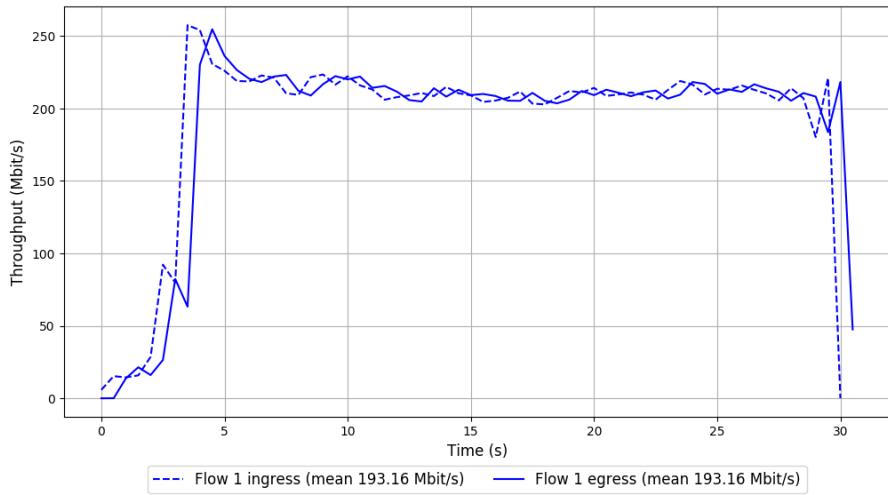


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-10-02 08:52:56
End at: 2018-10-02 08:53:26
Local clock offset: -1.489 ms
Remote clock offset: 0.295 ms

# Below is generated by plot.py at 2018-10-02 10:32:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 193.16 Mbit/s
95th percentile per-packet one-way delay: 111.277 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 193.16 Mbit/s
95th percentile per-packet one-way delay: 111.277 ms
Loss rate: 0.00%
```

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

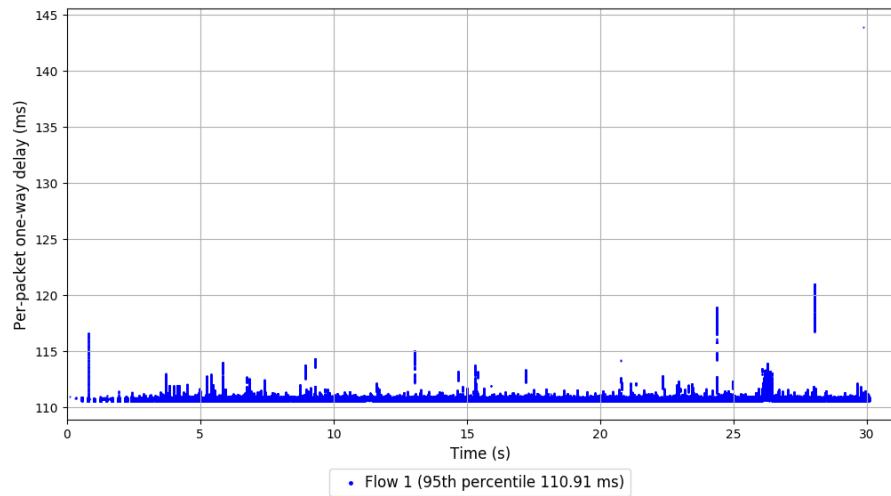
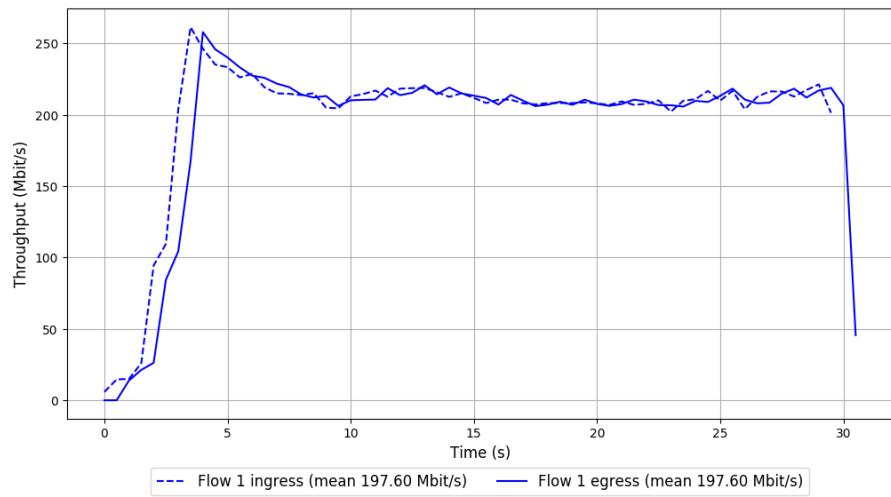


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-10-02 09:19:11
End at: 2018-10-02 09:19:41
Local clock offset: 0.446 ms
Remote clock offset: 0.283 ms

# Below is generated by plot.py at 2018-10-02 10:32:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 197.60 Mbit/s
95th percentile per-packet one-way delay: 110.911 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 197.60 Mbit/s
95th percentile per-packet one-way delay: 110.911 ms
Loss rate: 0.00%
```

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

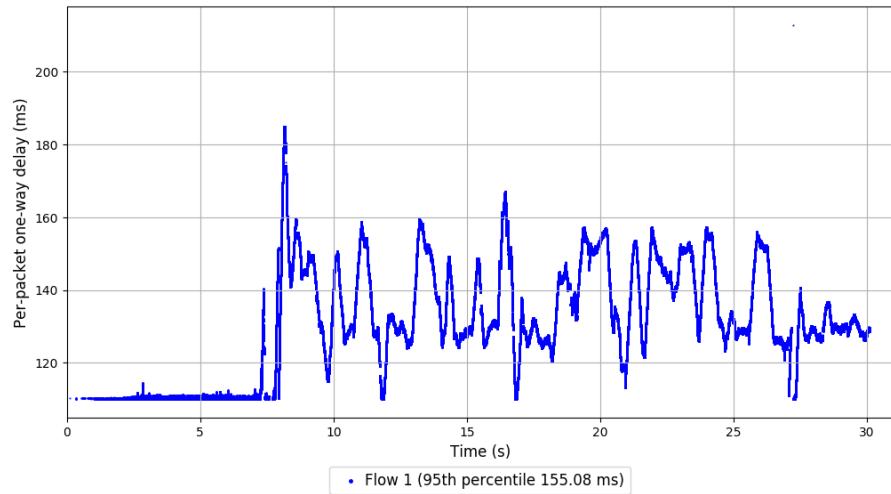
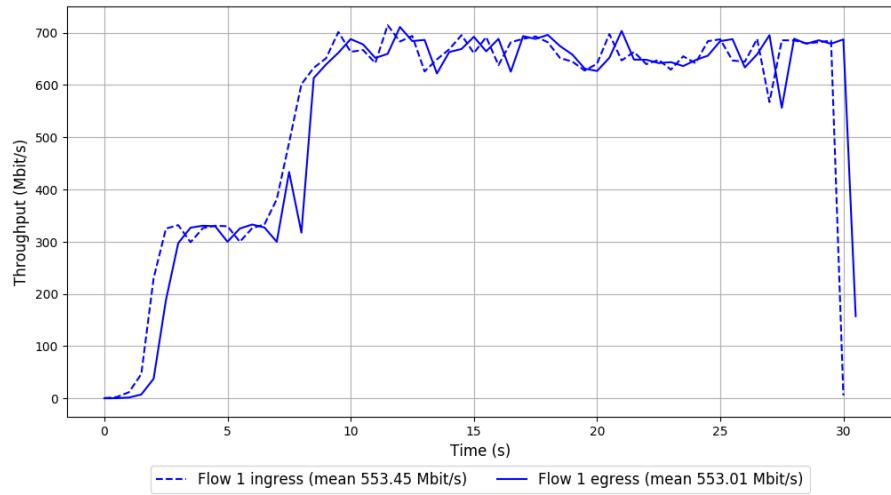


Run 1: Statistics of TCP Vegas

```
Start at: 2018-10-02 07:35:15
End at: 2018-10-02 07:35:45
Local clock offset: 0.158 ms
Remote clock offset: 0.183 ms

# Below is generated by plot.py at 2018-10-02 10:36:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 553.01 Mbit/s
95th percentile per-packet one-way delay: 155.080 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 553.01 Mbit/s
95th percentile per-packet one-way delay: 155.080 ms
Loss rate: 0.08%
```

Run 1: Report of TCP Vegas — Data Link

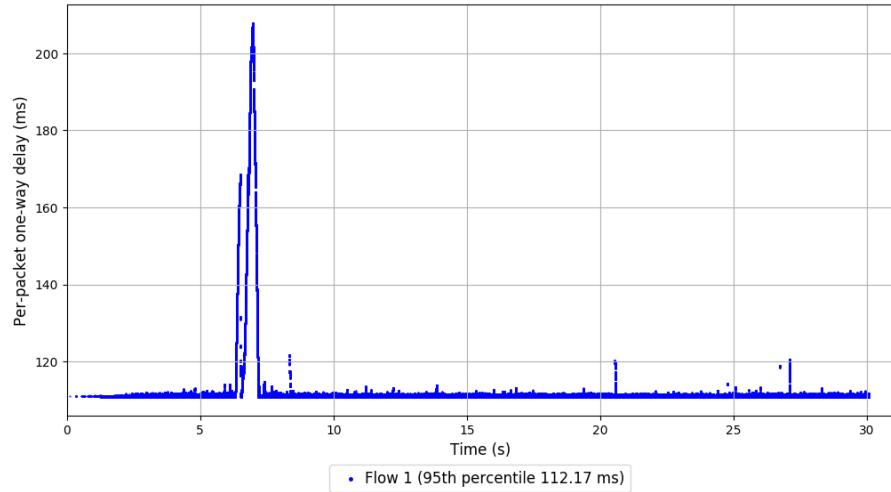
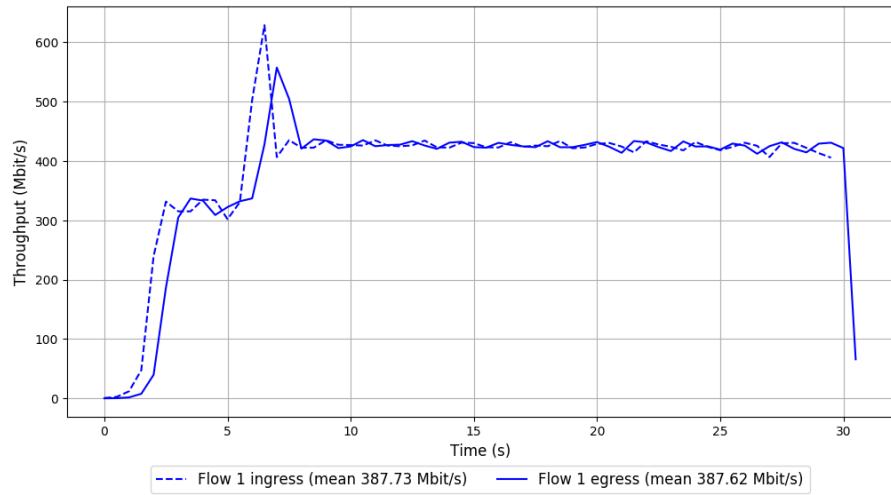


Run 2: Statistics of TCP Vegas

```
Start at: 2018-10-02 08:01:22
End at: 2018-10-02 08:01:52
Local clock offset: -0.695 ms
Remote clock offset: -0.127 ms

# Below is generated by plot.py at 2018-10-02 10:36:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 387.62 Mbit/s
95th percentile per-packet one-way delay: 112.171 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 387.62 Mbit/s
95th percentile per-packet one-way delay: 112.171 ms
Loss rate: 0.03%
```

Run 2: Report of TCP Vegas — Data Link

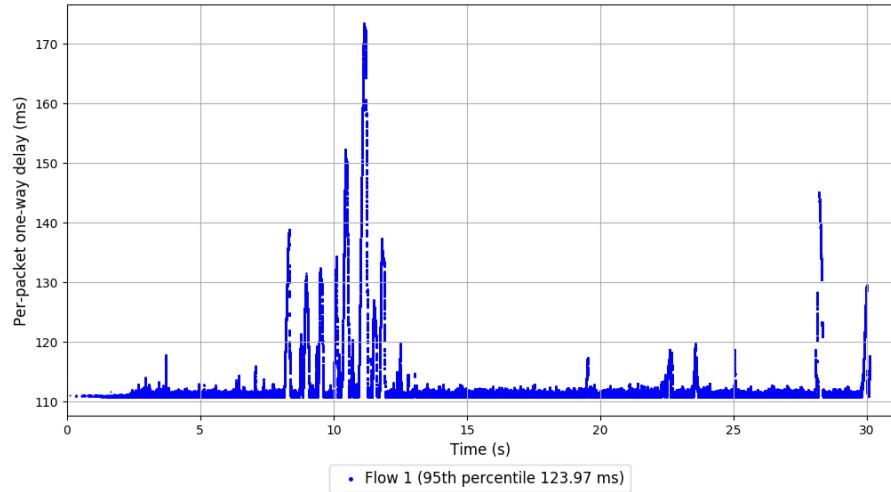
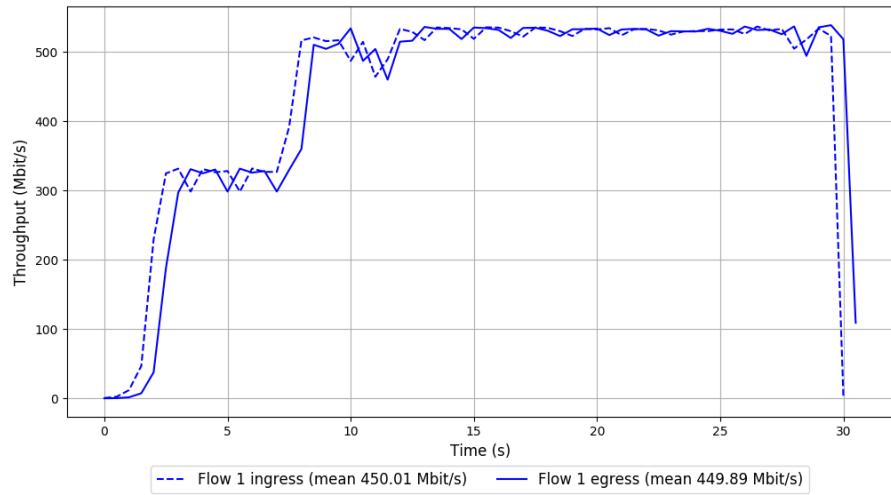


Run 3: Statistics of TCP Vegas

```
Start at: 2018-10-02 08:27:55
End at: 2018-10-02 08:28:25
Local clock offset: -0.616 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-10-02 10:39:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 449.89 Mbit/s
95th percentile per-packet one-way delay: 123.972 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 449.89 Mbit/s
95th percentile per-packet one-way delay: 123.972 ms
Loss rate: 0.03%
```

Run 3: Report of TCP Vegas — Data Link

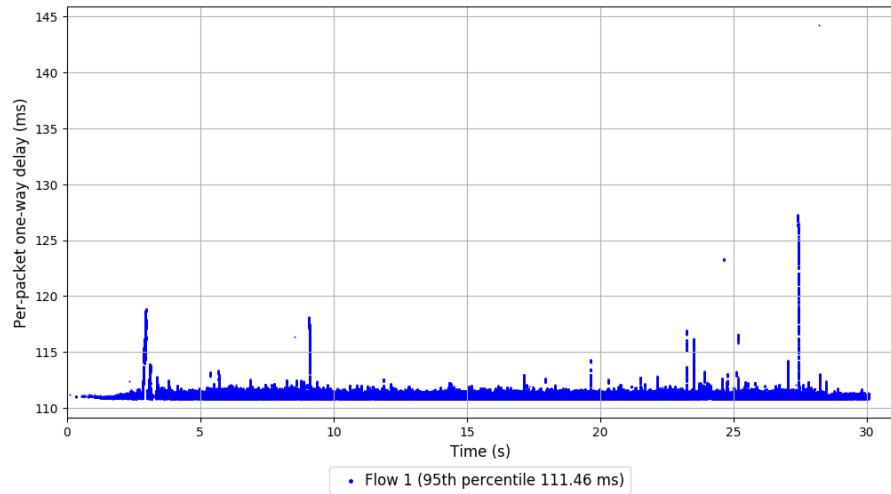
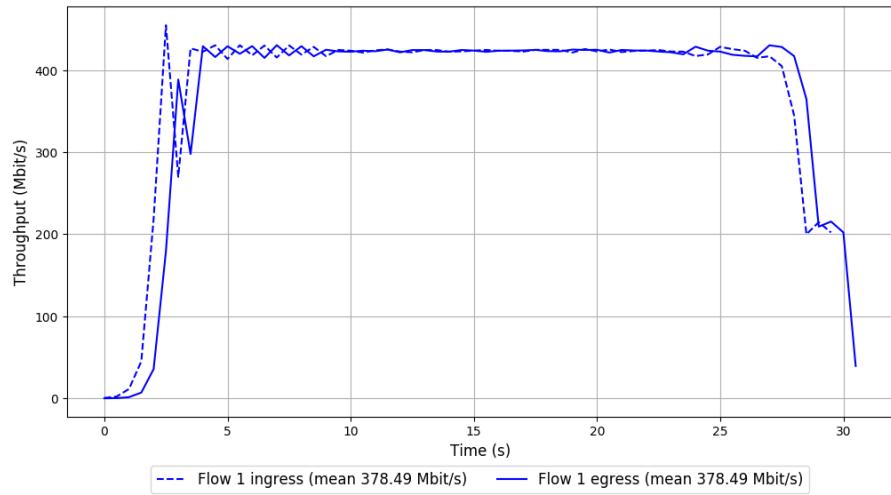


Run 4: Statistics of TCP Vegas

```
Start at: 2018-10-02 08:54:25
End at: 2018-10-02 08:54:55
Local clock offset: -0.11 ms
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2018-10-02 10:39:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 378.49 Mbit/s
95th percentile per-packet one-way delay: 111.456 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 378.49 Mbit/s
95th percentile per-packet one-way delay: 111.456 ms
Loss rate: 0.00%
```

Run 4: Report of TCP Vegas — Data Link

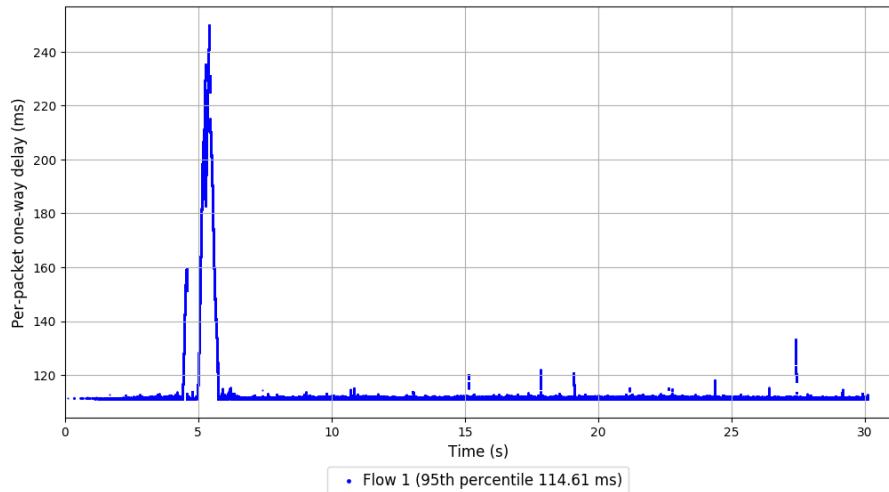
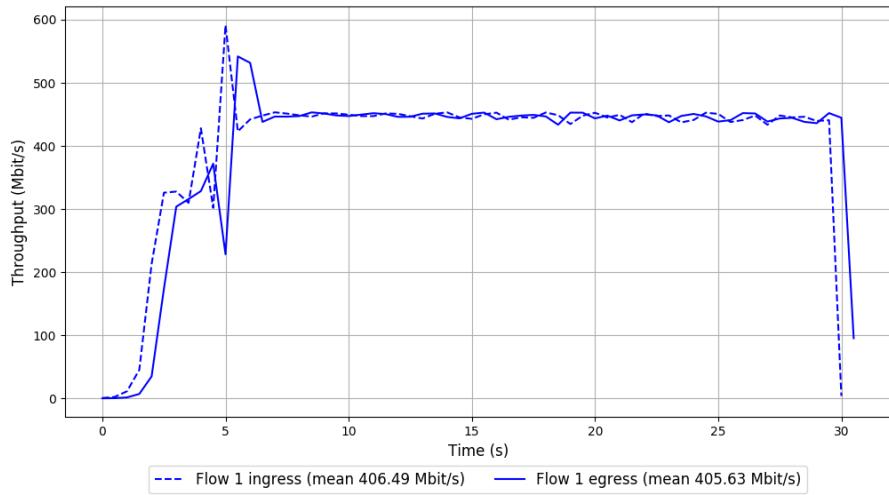


Run 5: Statistics of TCP Vegas

```
Start at: 2018-10-02 09:20:40
End at: 2018-10-02 09:21:10
Local clock offset: 0.153 ms
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2018-10-02 10:39:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 405.63 Mbit/s
95th percentile per-packet one-way delay: 114.610 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 405.63 Mbit/s
95th percentile per-packet one-way delay: 114.610 ms
Loss rate: 0.21%
```

Run 5: Report of TCP Vegas — Data Link

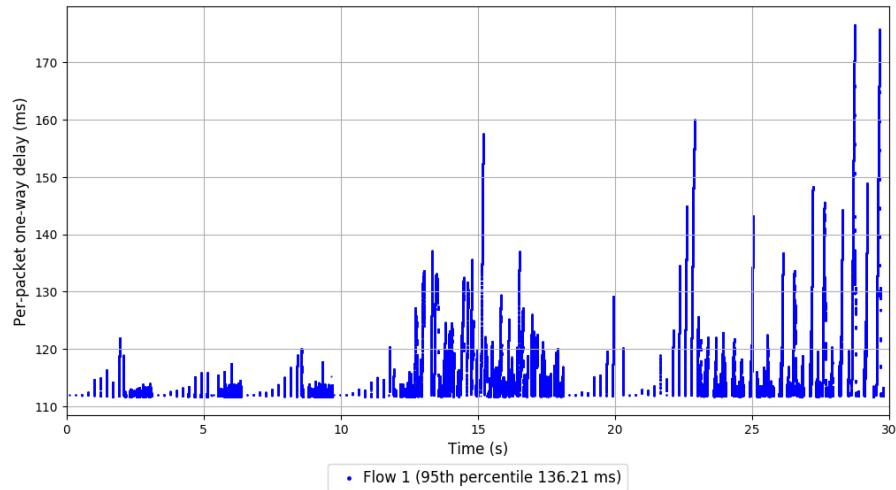
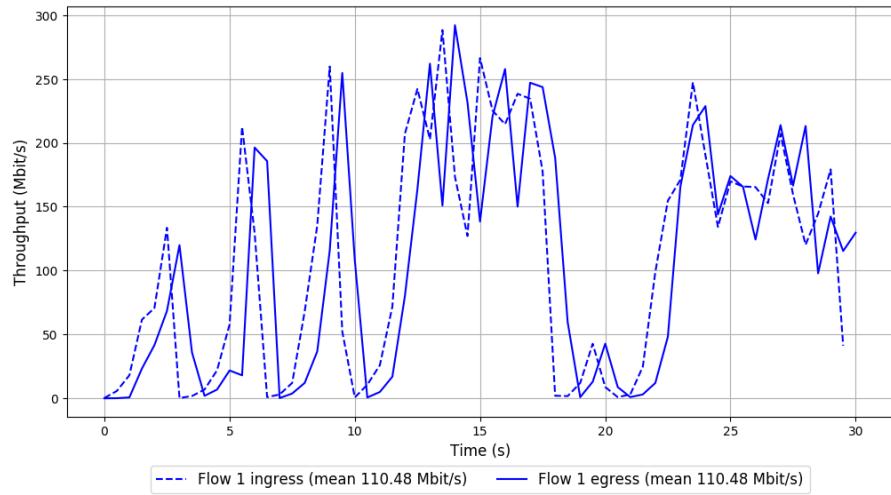


Run 1: Statistics of Verus

```
Start at: 2018-10-02 07:19:09
End at: 2018-10-02 07:19:39
Local clock offset: -0.843 ms
Remote clock offset: -0.462 ms

# Below is generated by plot.py at 2018-10-02 10:39:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 110.48 Mbit/s
95th percentile per-packet one-way delay: 136.210 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 110.48 Mbit/s
95th percentile per-packet one-way delay: 136.210 ms
Loss rate: 0.00%
```

Run 1: Report of Verus — Data Link

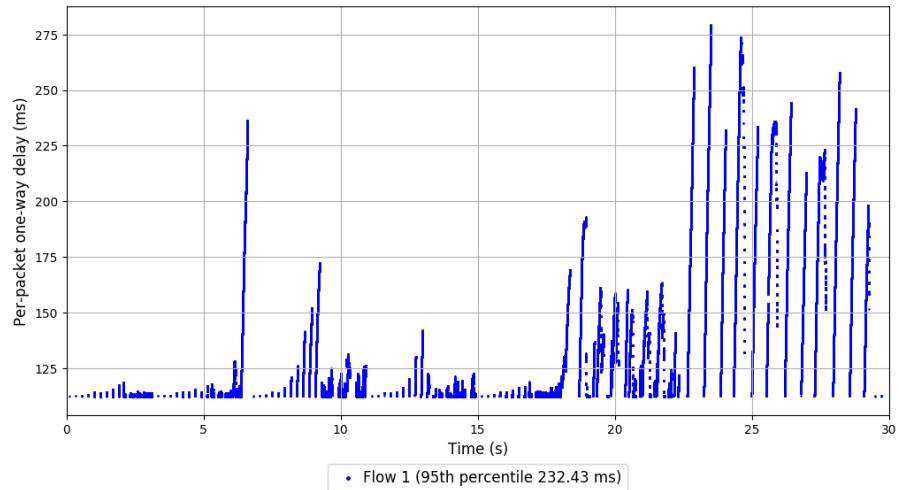
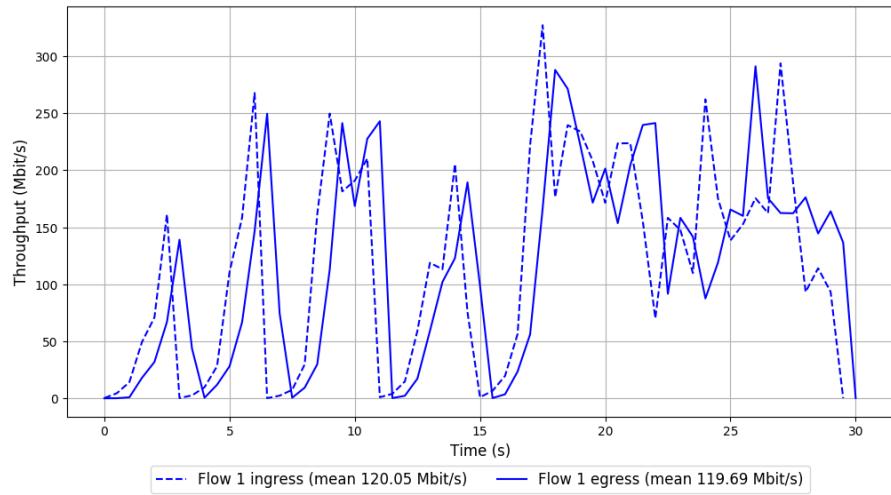


Run 2: Statistics of Verus

```
Start at: 2018-10-02 07:45:25
End at: 2018-10-02 07:45:55
Local clock offset: -1.315 ms
Remote clock offset: -0.509 ms

# Below is generated by plot.py at 2018-10-02 10:39:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 119.69 Mbit/s
95th percentile per-packet one-way delay: 232.428 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 119.69 Mbit/s
95th percentile per-packet one-way delay: 232.428 ms
Loss rate: 0.30%
```

Run 2: Report of Verus — Data Link

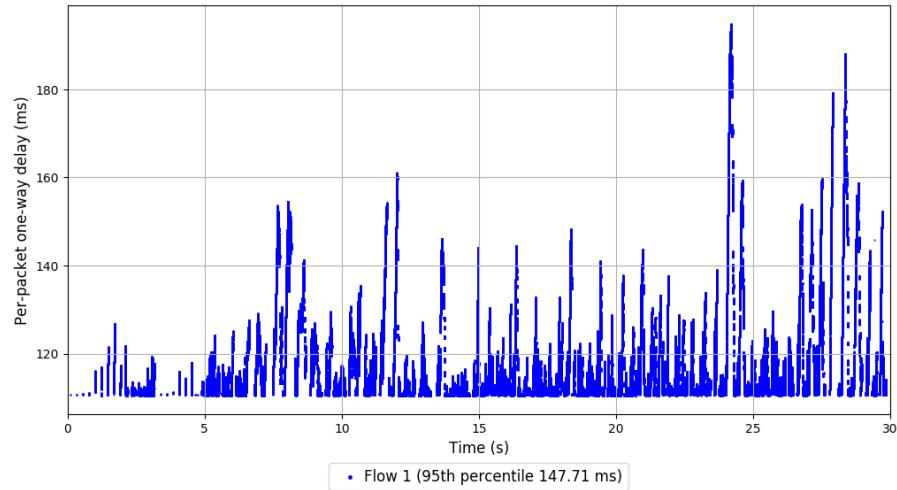
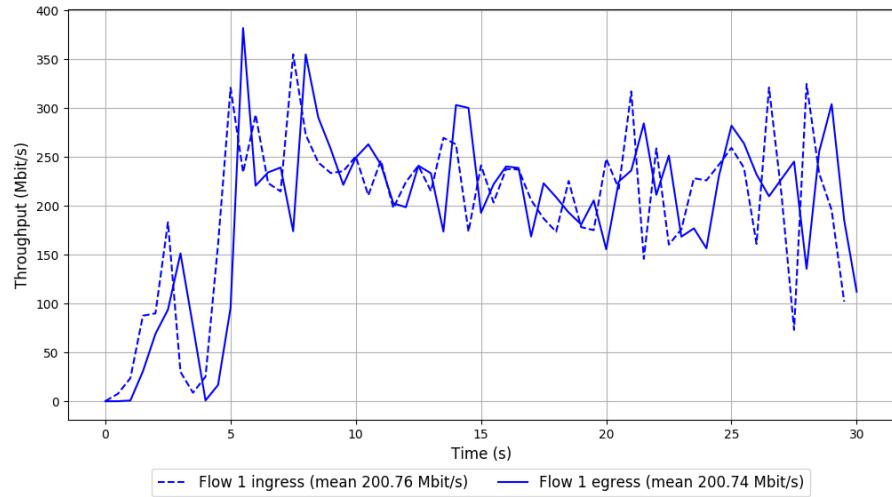


Run 3: Statistics of Verus

```
Start at: 2018-10-02 08:11:33
End at: 2018-10-02 08:12:03
Local clock offset: 0.973 ms
Remote clock offset: -0.108 ms

# Below is generated by plot.py at 2018-10-02 10:39:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 200.74 Mbit/s
95th percentile per-packet one-way delay: 147.712 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 200.74 Mbit/s
95th percentile per-packet one-way delay: 147.712 ms
Loss rate: 0.00%
```

Run 3: Report of Verus — Data Link

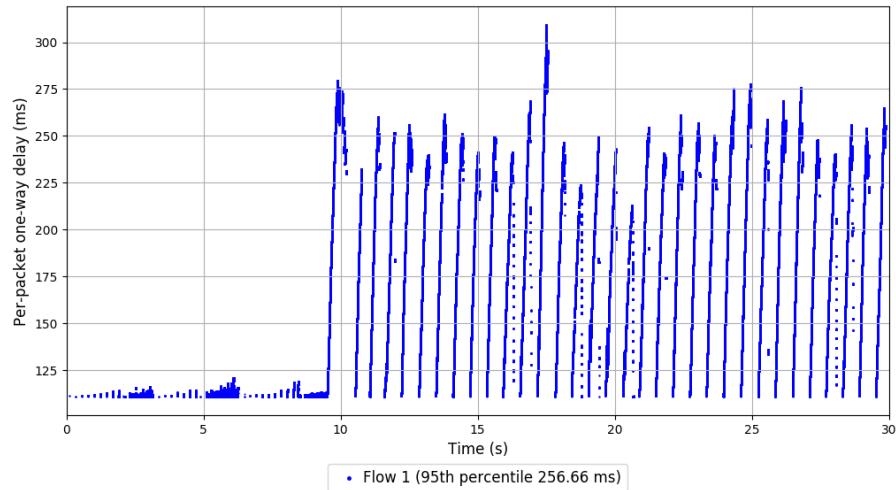
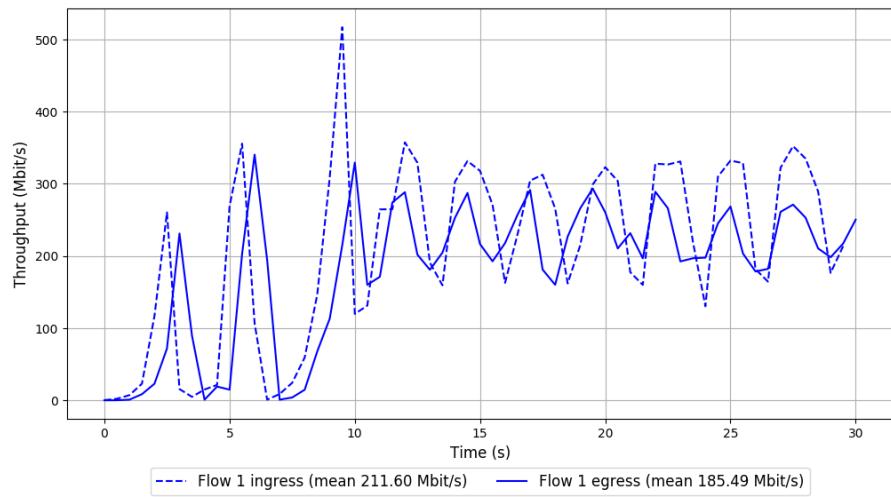


Run 4: Statistics of Verus

```
Start at: 2018-10-02 08:38:04
End at: 2018-10-02 08:38:34
Local clock offset: 0.103 ms
Remote clock offset: -0.037 ms

# Below is generated by plot.py at 2018-10-02 10:41:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 185.49 Mbit/s
95th percentile per-packet one-way delay: 256.662 ms
Loss rate: 12.05%
-- Flow 1:
Average throughput: 185.49 Mbit/s
95th percentile per-packet one-way delay: 256.662 ms
Loss rate: 12.05%
```

Run 4: Report of Verus — Data Link

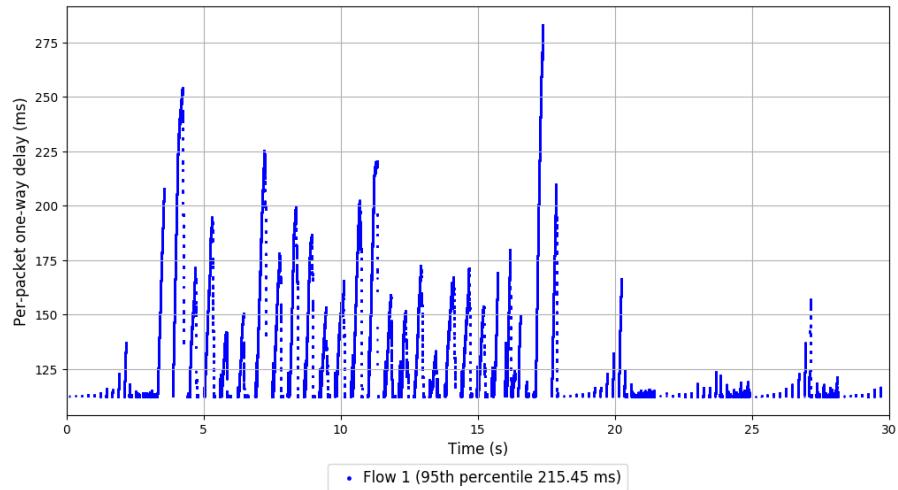
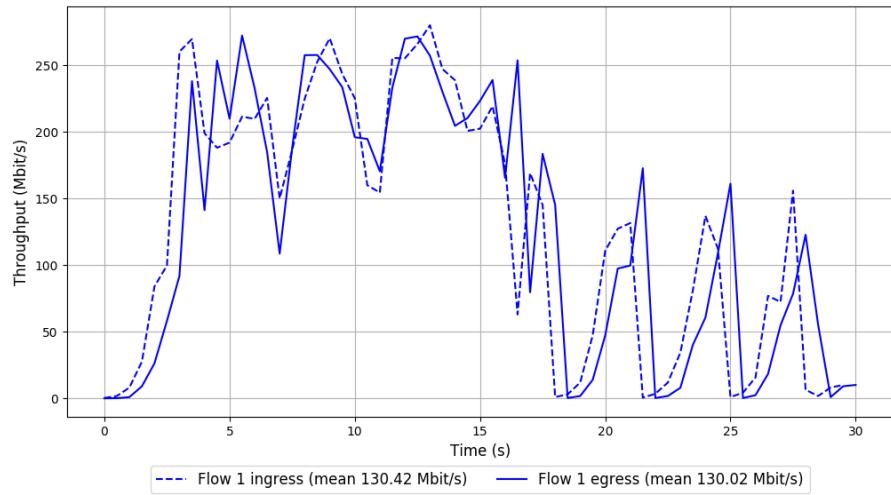


Run 5: Statistics of Verus

```
Start at: 2018-10-02 09:04:35
End at: 2018-10-02 09:05:05
Local clock offset: -1.456 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2018-10-02 10:41:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 130.02 Mbit/s
95th percentile per-packet one-way delay: 215.446 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 130.02 Mbit/s
95th percentile per-packet one-way delay: 215.446 ms
Loss rate: 0.30%
```

Run 5: Report of Verus — Data Link

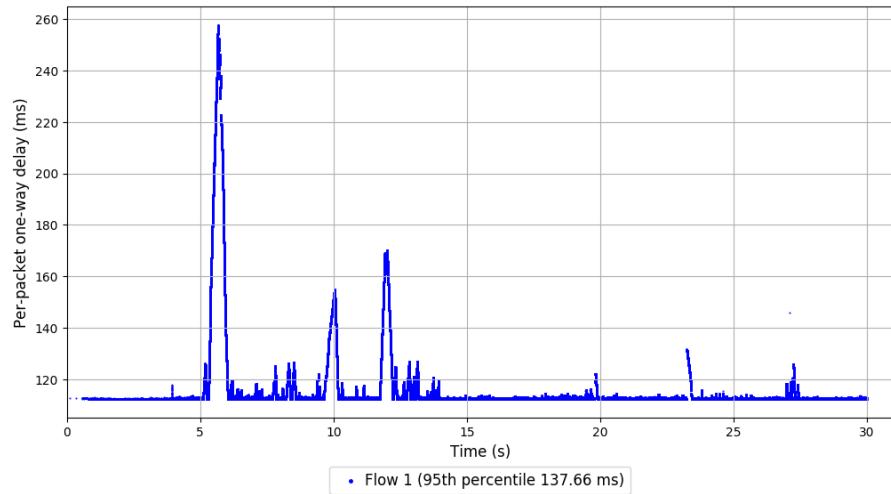
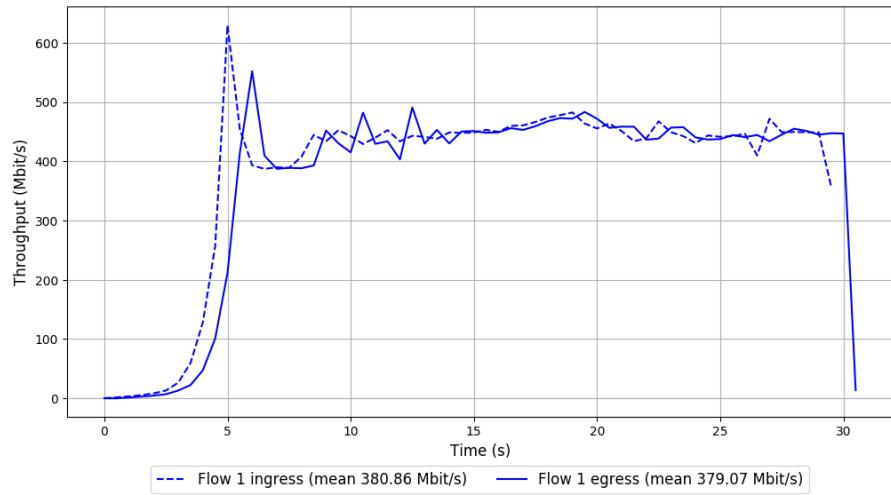


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-10-02 07:26:23
End at: 2018-10-02 07:26:53
Local clock offset: -1.174 ms
Remote clock offset: -0.103 ms

# Below is generated by plot.py at 2018-10-02 10:41:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 379.07 Mbit/s
95th percentile per-packet one-way delay: 137.665 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 379.07 Mbit/s
95th percentile per-packet one-way delay: 137.665 ms
Loss rate: 0.47%
```

Run 1: Report of PCC-Vivace — Data Link

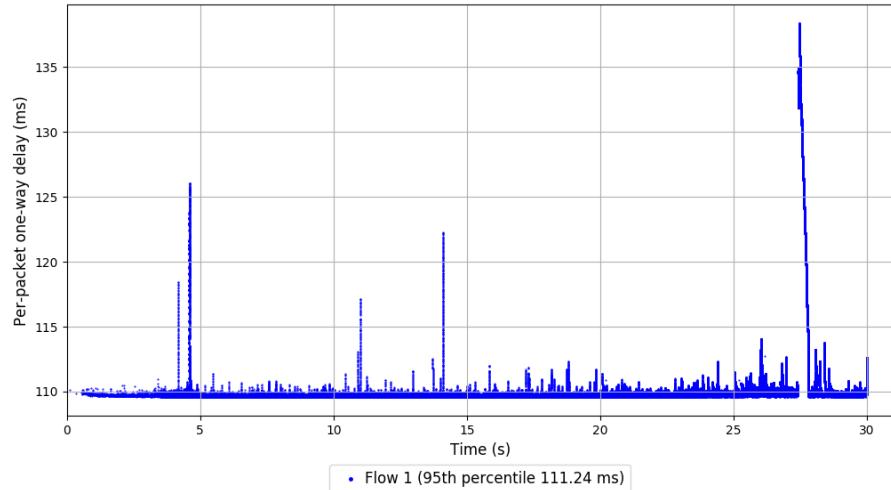
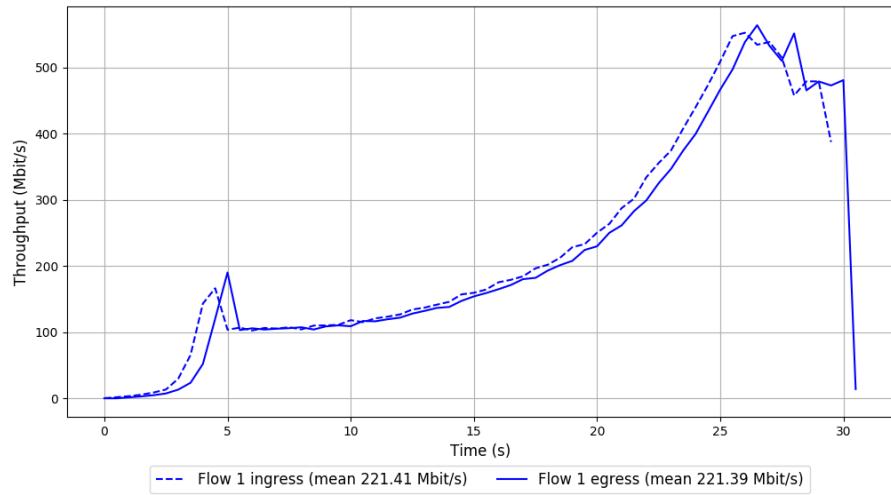


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-10-02 07:52:34
End at: 2018-10-02 07:53:04
Local clock offset: -0.116 ms
Remote clock offset: 0.197 ms

# Below is generated by plot.py at 2018-10-02 10:41:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 221.39 Mbit/s
95th percentile per-packet one-way delay: 111.241 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 221.39 Mbit/s
95th percentile per-packet one-way delay: 111.241 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Vivace — Data Link

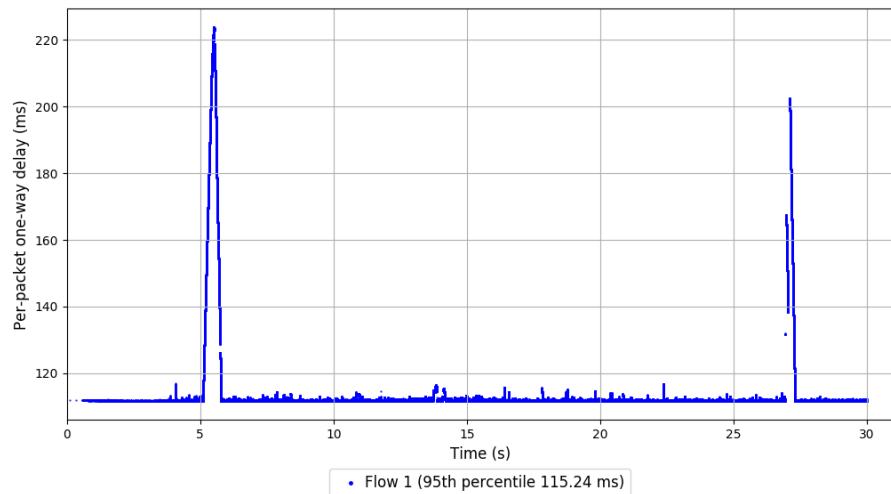
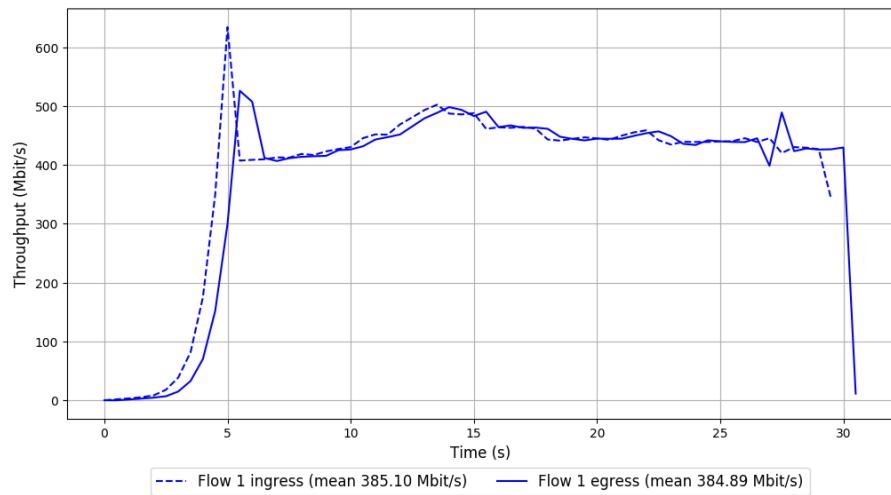


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-10-02 08:18:56
End at: 2018-10-02 08:19:26
Local clock offset: -0.031 ms
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-10-02 10:42:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 384.89 Mbit/s
95th percentile per-packet one-way delay: 115.244 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 384.89 Mbit/s
95th percentile per-packet one-way delay: 115.244 ms
Loss rate: 0.06%
```

Run 3: Report of PCC-Vivace — Data Link

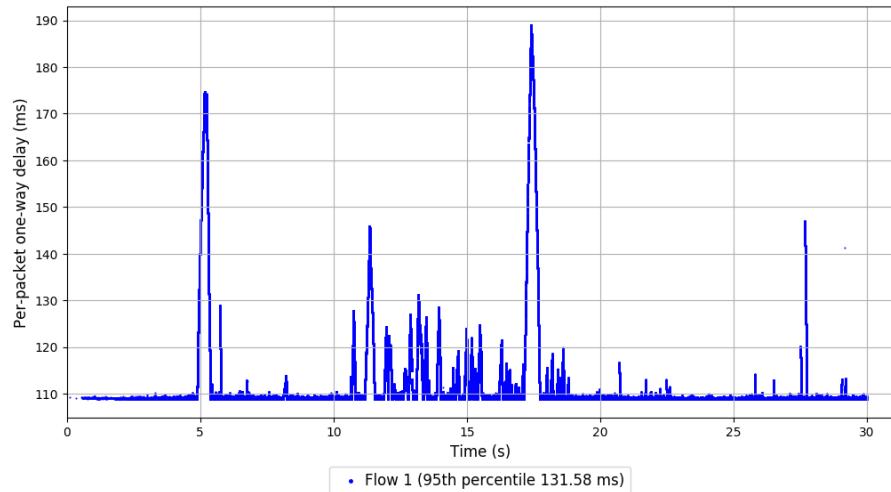
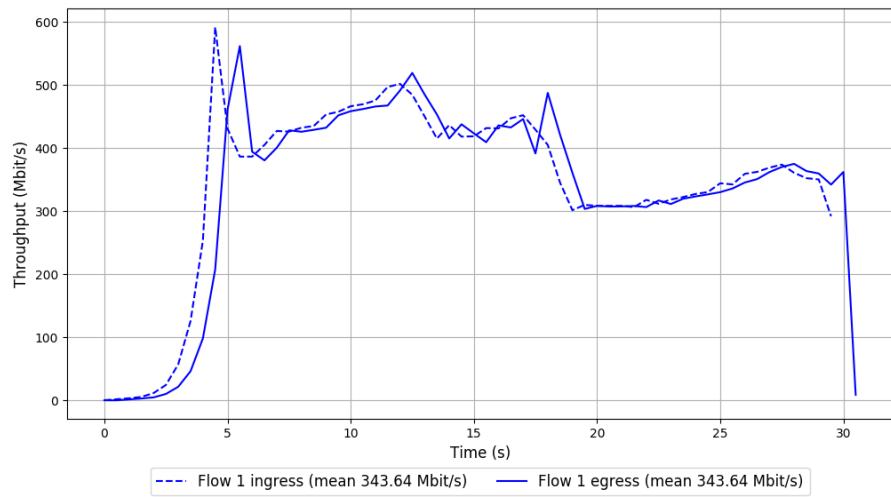


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-10-02 08:45:31
End at: 2018-10-02 08:46:01
Local clock offset: 0.287 ms
Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2018-10-02 10:42:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 343.64 Mbit/s
95th percentile per-packet one-way delay: 131.578 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 343.64 Mbit/s
95th percentile per-packet one-way delay: 131.578 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

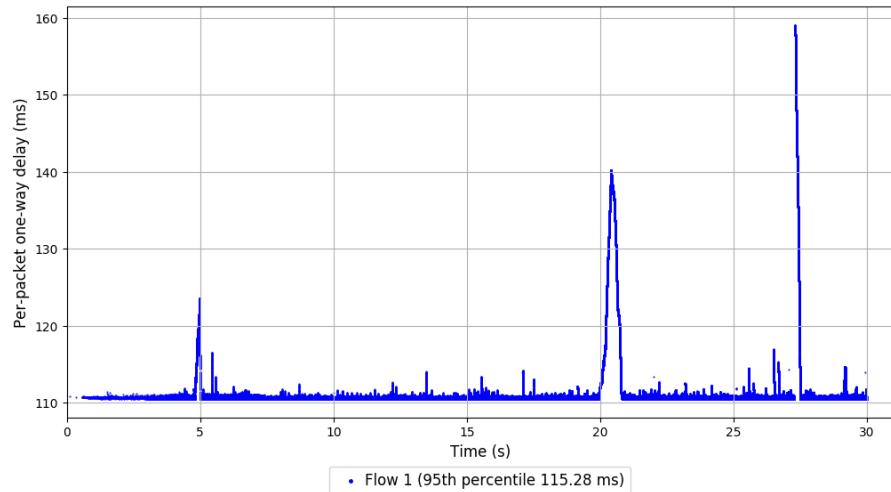
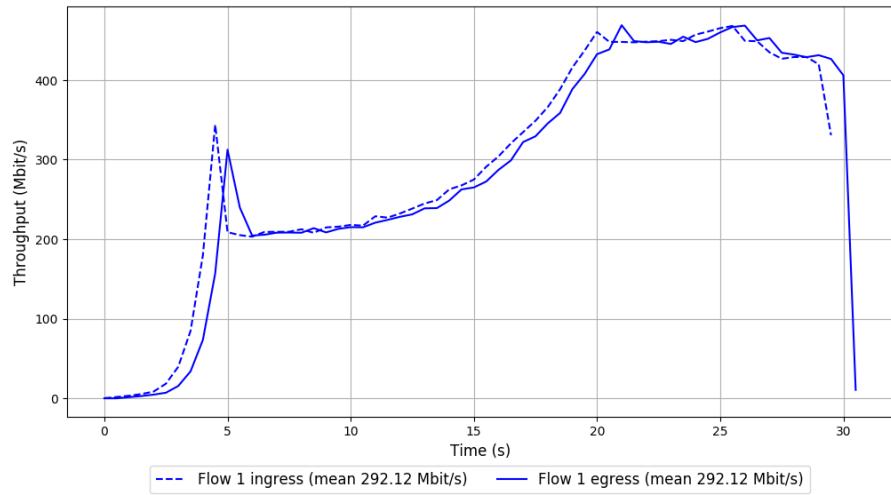


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-10-02 09:11:45
End at: 2018-10-02 09:12:15
Local clock offset: -1.46 ms
Remote clock offset: -0.058 ms

# Below is generated by plot.py at 2018-10-02 10:42:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 292.12 Mbit/s
95th percentile per-packet one-way delay: 115.277 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 292.12 Mbit/s
95th percentile per-packet one-way delay: 115.277 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link

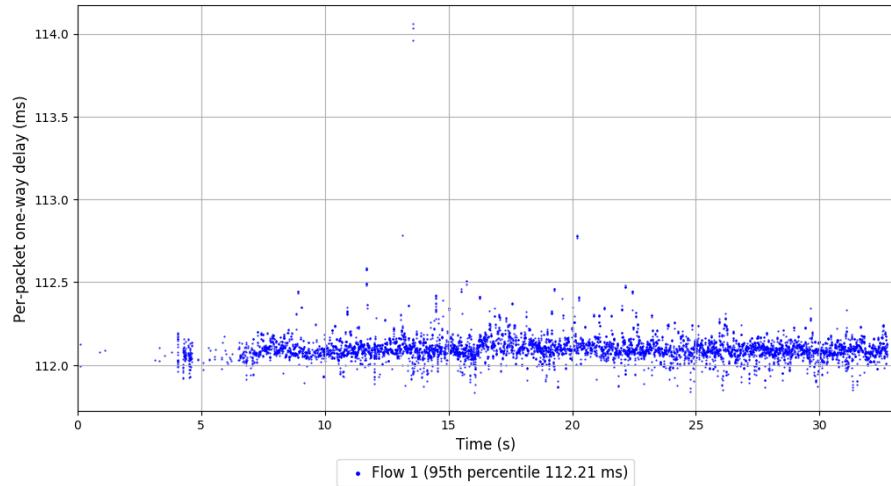
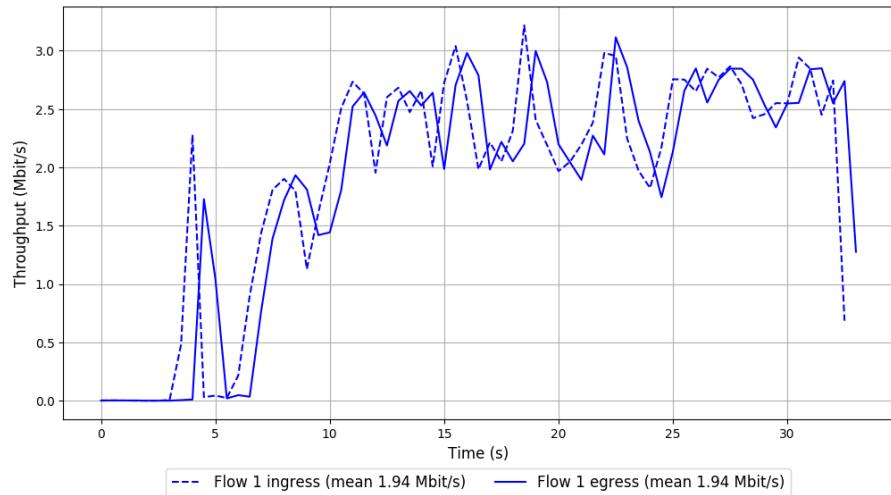


Run 1: Statistics of WebRTC media

```
Start at: 2018-10-02 07:15:38
End at: 2018-10-02 07:16:08
Local clock offset: -0.586 ms
Remote clock offset: -0.058 ms

# Below is generated by plot.py at 2018-10-02 10:42:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 112.212 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 112.212 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

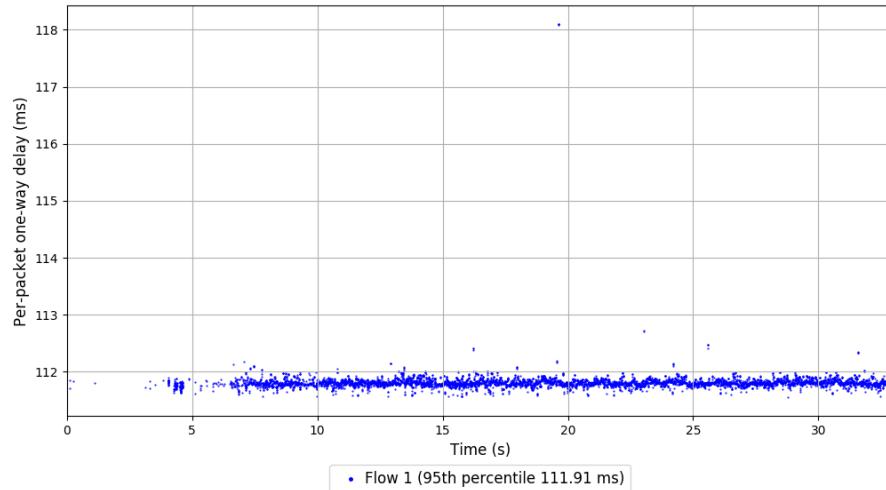
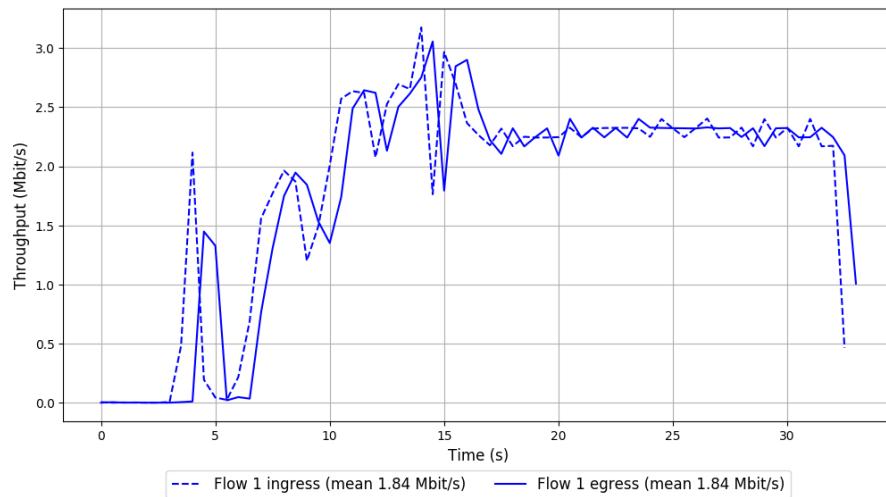


Run 2: Statistics of WebRTC media

```
Start at: 2018-10-02 07:41:54
End at: 2018-10-02 07:42:24
Local clock offset: -0.229 ms
Remote clock offset: -0.177 ms

# Below is generated by plot.py at 2018-10-02 10:42:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 111.910 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 111.910 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

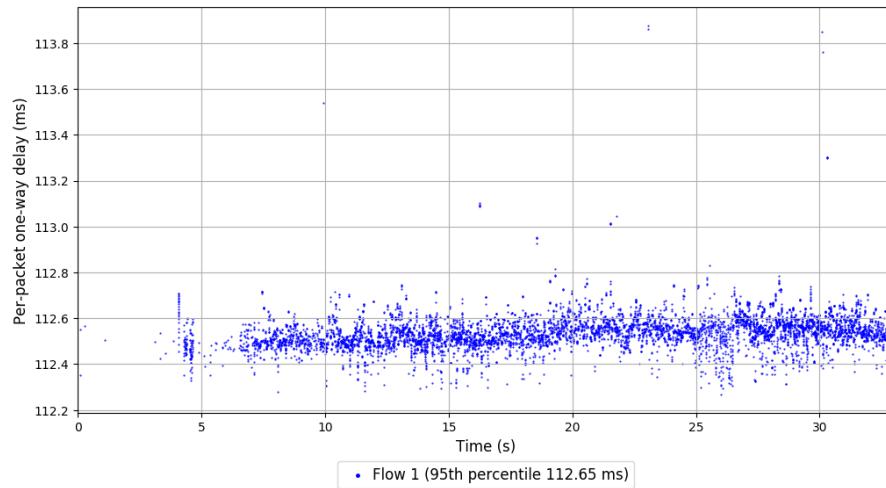
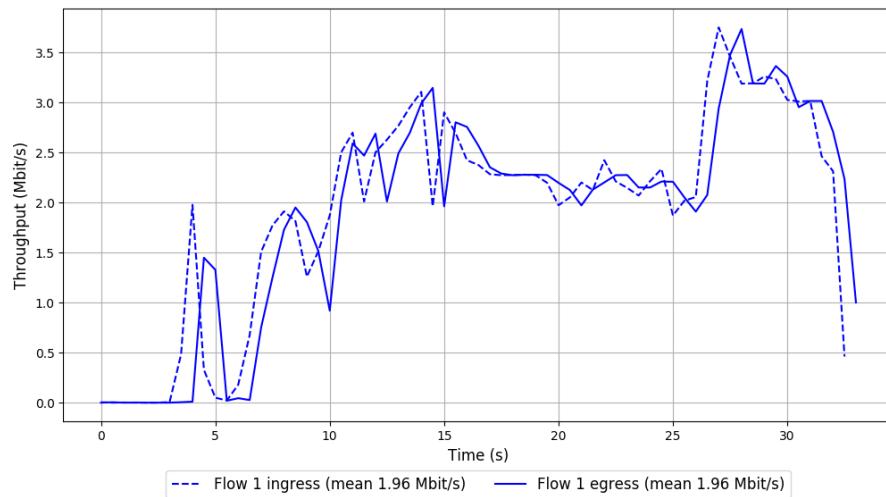


```
Run 3: Statistics of WebRTC media

Start at: 2018-10-02 08:08:02
End at: 2018-10-02 08:08:32
Local clock offset: -1.442 ms
Remote clock offset: -0.085 ms

# Below is generated by plot.py at 2018-10-02 10:42:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 112.648 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 112.648 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

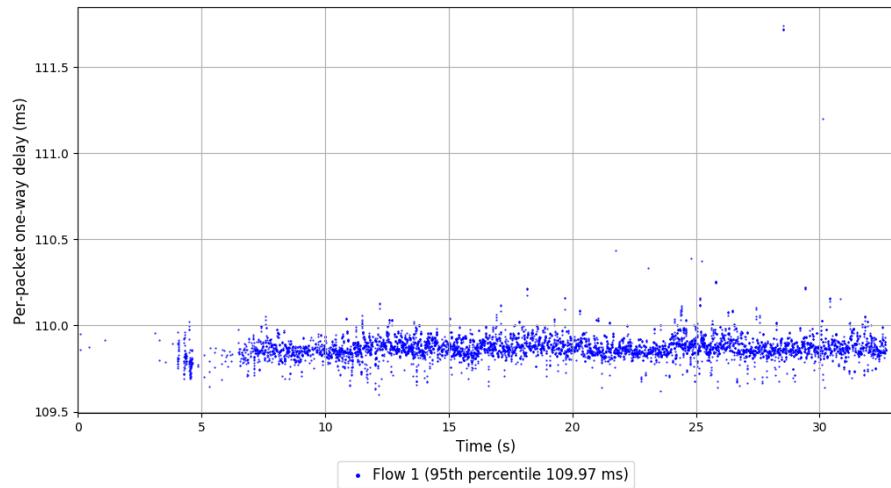
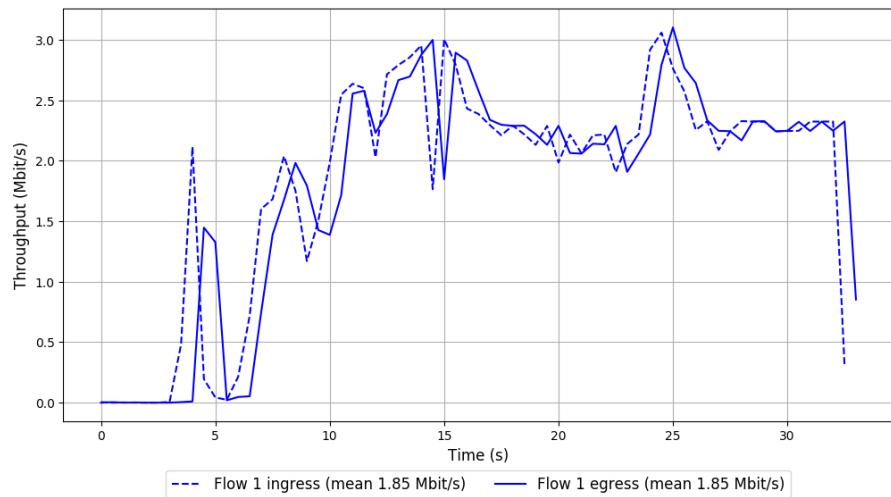


Run 4: Statistics of WebRTC media

```
Start at: 2018-10-02 08:34:32
End at: 2018-10-02 08:35:02
Local clock offset: -0.779 ms
Remote clock offset: -0.452 ms

# Below is generated by plot.py at 2018-10-02 10:42:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 109.971 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 109.971 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



```
Run 5: Statistics of WebRTC media

Start at: 2018-10-02 09:01:04
End at: 2018-10-02 09:01:34
Local clock offset: -1.544 ms
Remote clock offset: -0.388 ms

# Below is generated by plot.py at 2018-10-02 10:42:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 112.915 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 112.915 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link

