

Pantheon Report

Generated at 2018-10-26 11:53:03 (UTC).
Data path: GCE London on `ens4` (*remote*) → GCE Sydney on `ens4` (*local*).
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:

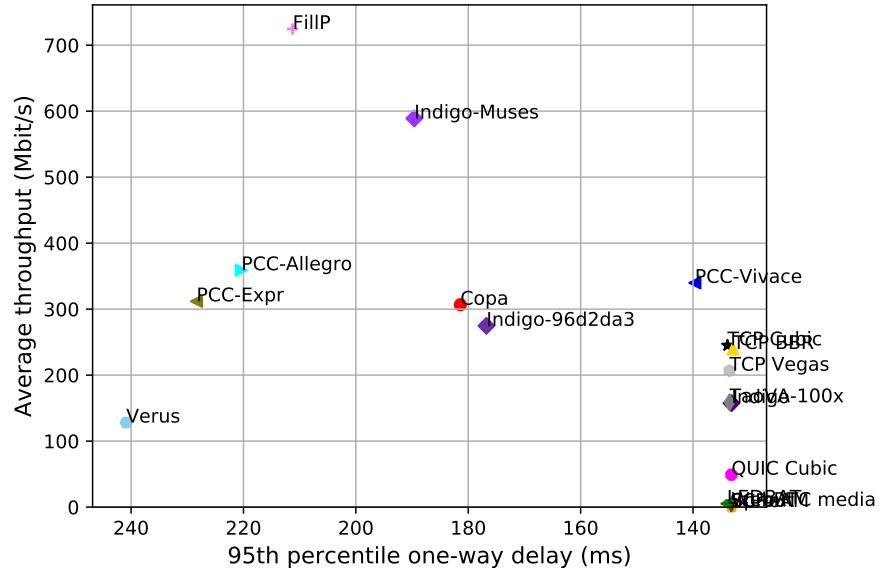
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

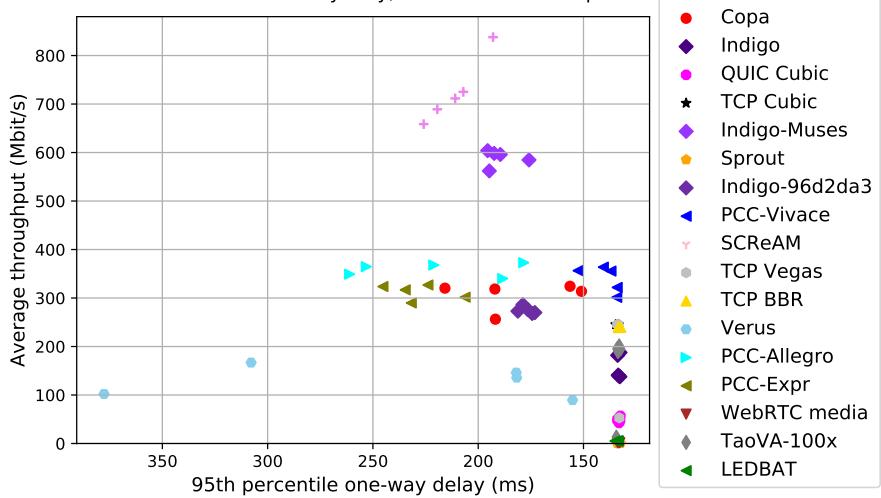
```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
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 London to GCE Sydney, 5 runs of 30s each per scheme
(mean of all runs by scheme)



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



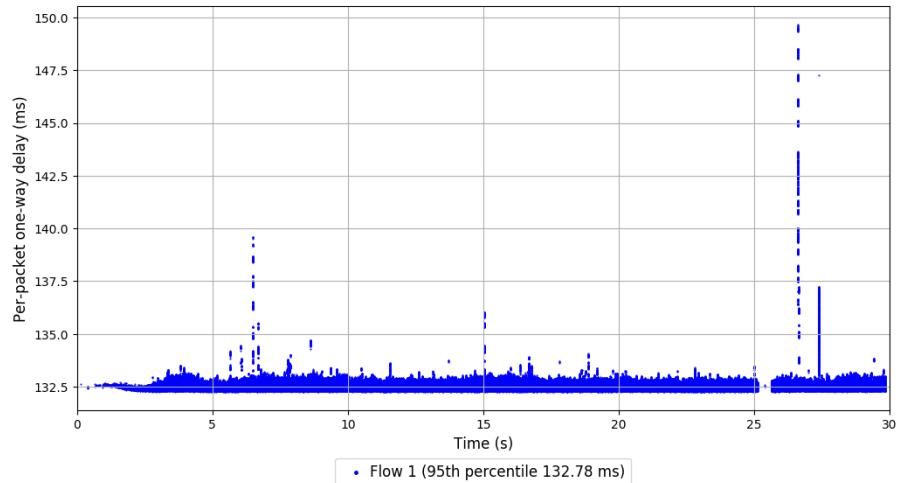
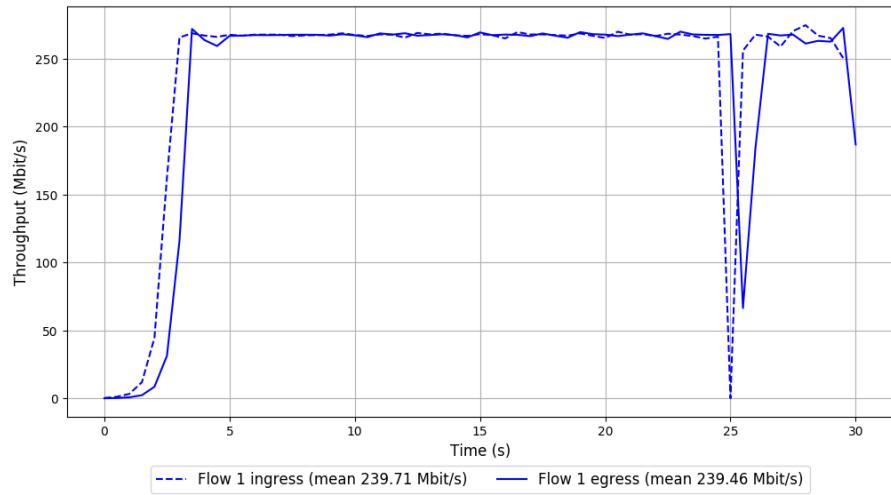
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	239.56	132.89	0.99
Copa	5	306.64	181.41	1.07
TCP Cubic	5	245.07	133.88	0.95
FillP	5	724.50	211.25	6.39
Indigo	5	157.51	133.16	0.94
Indigo-96d2da3	5	274.68	176.77	0.83
LEDBAT	5	5.24	133.98	1.78
Indigo-Muses	5	588.99	189.60	1.34
PCC-Allegro	5	358.94	220.39	4.10
PCC-Expr	5	311.78	228.37	3.86
QUIC Cubic	5	49.07	133.17	1.45
SCReAM	5	0.15	133.40	0.88
Sprout	5	0.63	133.14	0.79
TaoVA-100x	5	158.81	133.50	0.94
TCP Vegas	5	206.70	133.52	0.80
Verus	5	128.14	240.88	12.35
PCC-Vivace	5	339.77	139.67	1.23
WebRTC media	5	1.79	133.21	1.09

Run 1: Statistics of TCP BBR

```
Start at: 2018-10-26 08:38:51
End at: 2018-10-26 08:39:21
Local clock offset: -0.503 ms
Remote clock offset: 0.283 ms

# Below is generated by plot.py at 2018-10-26 10:47:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.46 Mbit/s
95th percentile per-packet one-way delay: 132.778 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 239.46 Mbit/s
95th percentile per-packet one-way delay: 132.778 ms
Loss rate: 0.99%
```

Run 1: Report of TCP BBR — Data Link

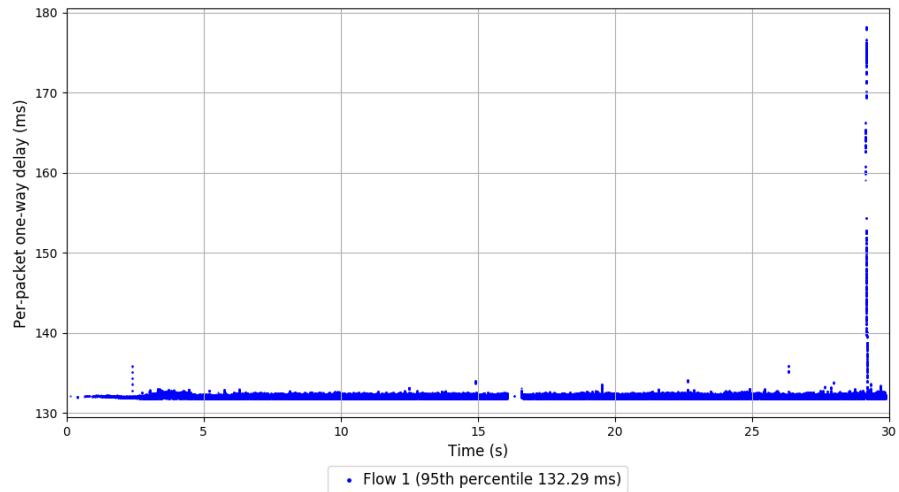
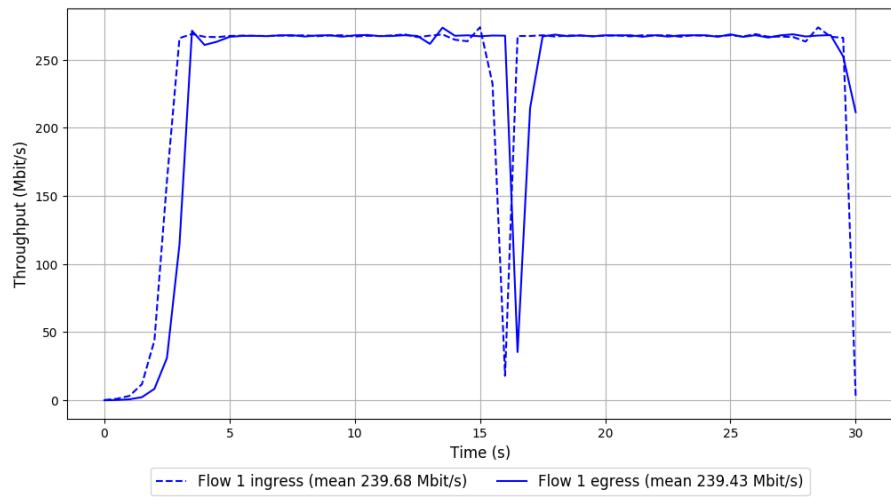


Run 2: Statistics of TCP BBR

```
Start at: 2018-10-26 09:05:35
End at: 2018-10-26 09:06:05
Local clock offset: -1.347 ms
Remote clock offset: -0.203 ms

# Below is generated by plot.py at 2018-10-26 10:47:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.43 Mbit/s
95th percentile per-packet one-way delay: 132.289 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 239.43 Mbit/s
95th percentile per-packet one-way delay: 132.289 ms
Loss rate: 0.99%
```

Run 2: Report of TCP BBR — Data Link

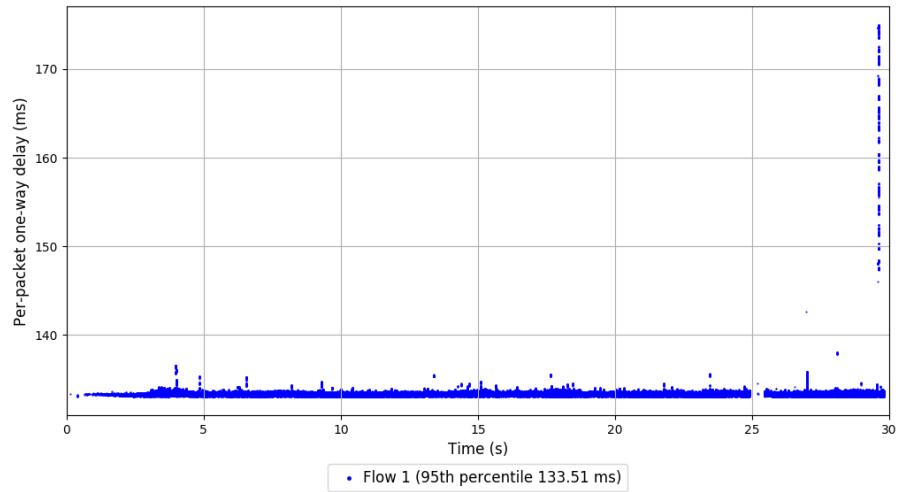
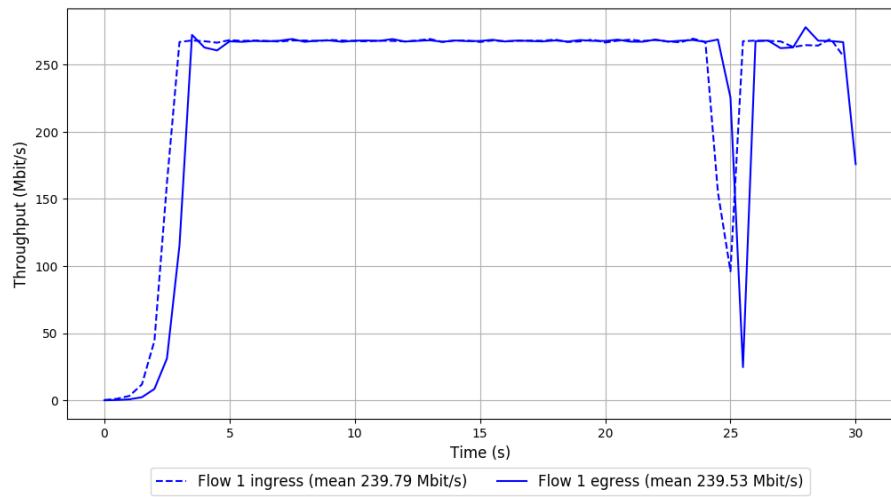


Run 3: Statistics of TCP BBR

```
Start at: 2018-10-26 09:32:04
End at: 2018-10-26 09:32:34
Local clock offset: -0.405 ms
Remote clock offset: -0.431 ms

# Below is generated by plot.py at 2018-10-26 10:47:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.53 Mbit/s
95th percentile per-packet one-way delay: 133.509 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 239.53 Mbit/s
95th percentile per-packet one-way delay: 133.509 ms
Loss rate: 0.99%
```

Run 3: Report of TCP BBR — Data Link

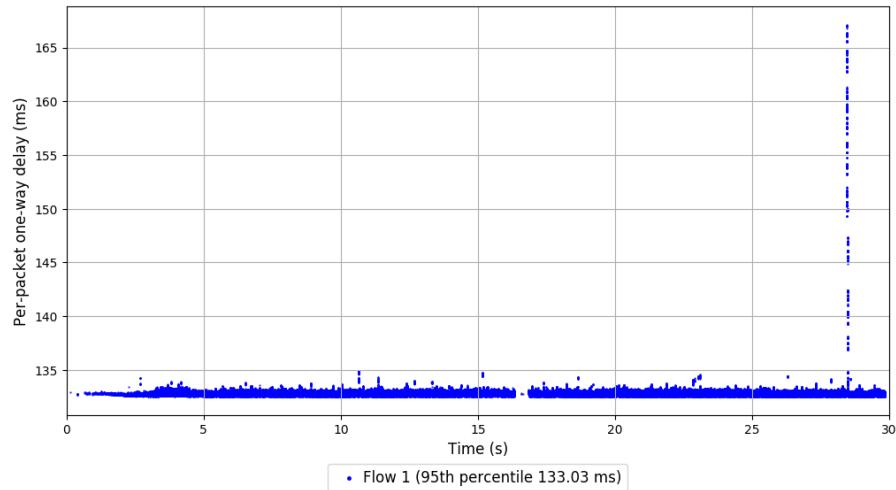
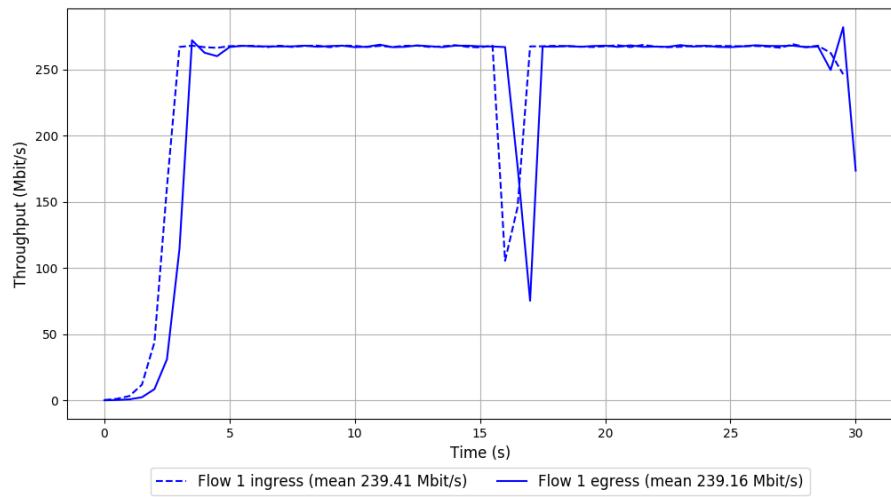


Run 4: Statistics of TCP BBR

```
Start at: 2018-10-26 09:58:03
End at: 2018-10-26 09:58:33
Local clock offset: -0.374 ms
Remote clock offset: -0.111 ms

# Below is generated by plot.py at 2018-10-26 10:47:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 239.16 Mbit/s
95th percentile per-packet one-way delay: 133.035 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 239.16 Mbit/s
95th percentile per-packet one-way delay: 133.035 ms
Loss rate: 0.99%
```

Run 4: Report of TCP BBR — Data Link

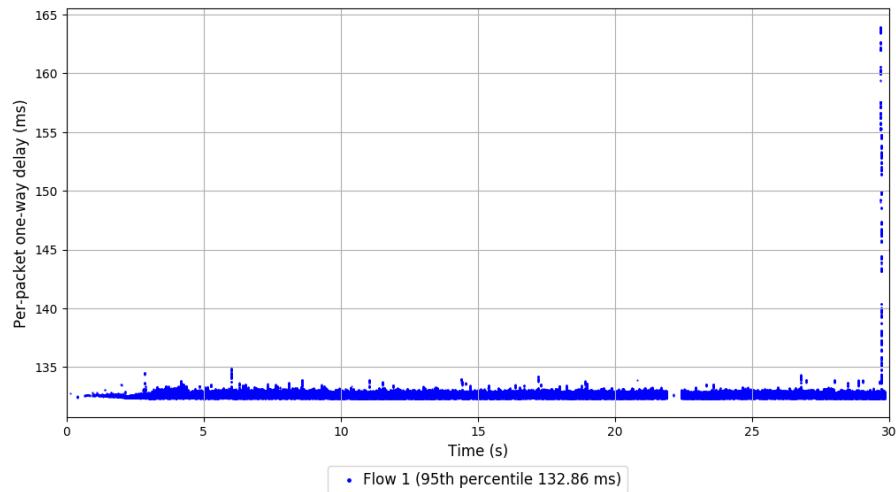
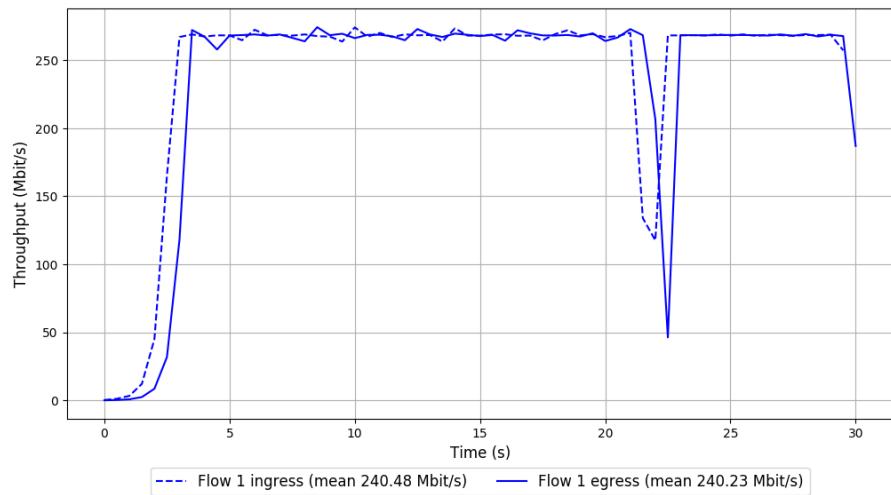


Run 5: Statistics of TCP BBR

```
Start at: 2018-10-26 10:24:13
End at: 2018-10-26 10:24:43
Local clock offset: -0.084 ms
Remote clock offset: -0.119 ms

# Below is generated by plot.py at 2018-10-26 10:47:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 240.23 Mbit/s
95th percentile per-packet one-way delay: 132.858 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 240.23 Mbit/s
95th percentile per-packet one-way delay: 132.858 ms
Loss rate: 0.99%
```

Run 5: Report of TCP BBR — Data Link

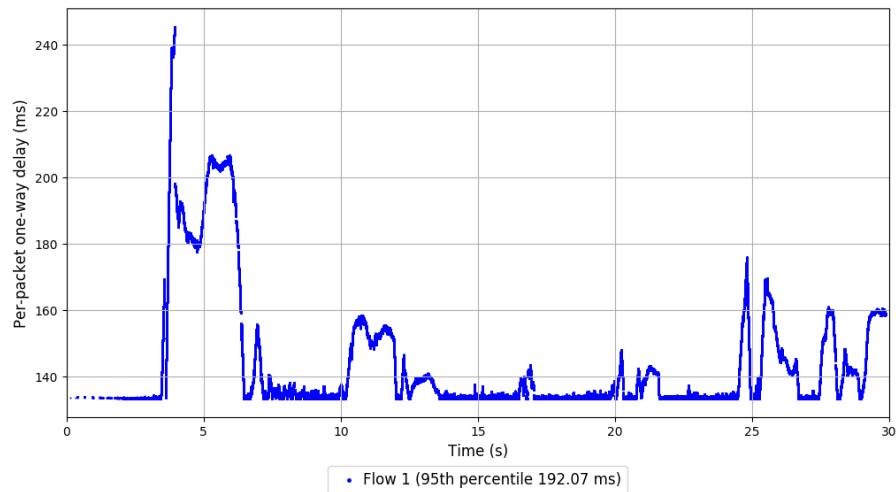
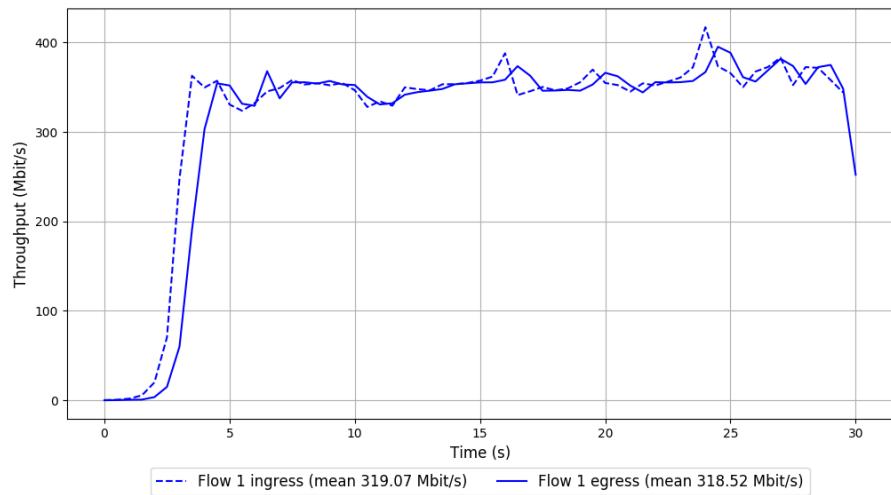


Run 1: Statistics of Copa

```
Start at: 2018-10-26 08:43:31
End at: 2018-10-26 08:44:01
Local clock offset: 0.106 ms
Remote clock offset: -0.119 ms

# Below is generated by plot.py at 2018-10-26 10:54:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 318.52 Mbit/s
95th percentile per-packet one-way delay: 192.072 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 318.52 Mbit/s
95th percentile per-packet one-way delay: 192.072 ms
Loss rate: 1.06%
```

Run 1: Report of Copa — Data Link

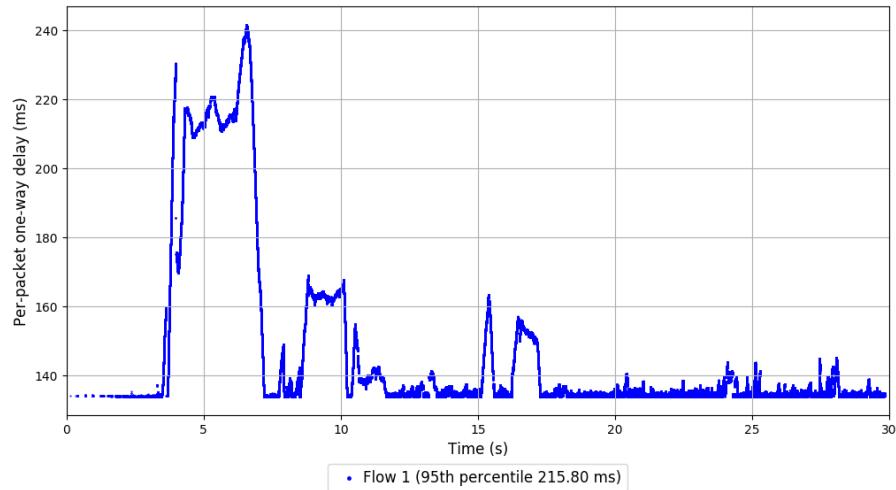
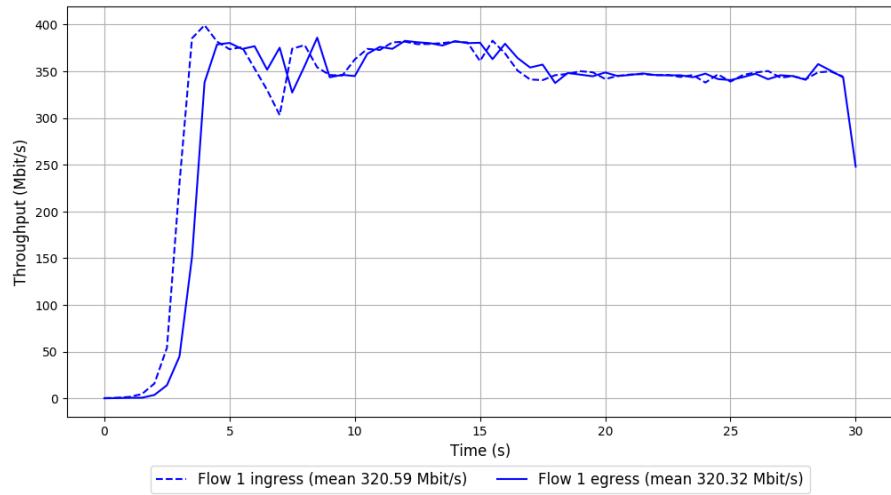


Run 2: Statistics of Copa

```
Start at: 2018-10-26 09:10:08
End at: 2018-10-26 09:10:38
Local clock offset: 0.294 ms
Remote clock offset: -0.555 ms

# Below is generated by plot.py at 2018-10-26 10:54:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 320.32 Mbit/s
95th percentile per-packet one-way delay: 215.798 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 320.32 Mbit/s
95th percentile per-packet one-way delay: 215.798 ms
Loss rate: 0.97%
```

Run 2: Report of Copa — Data Link

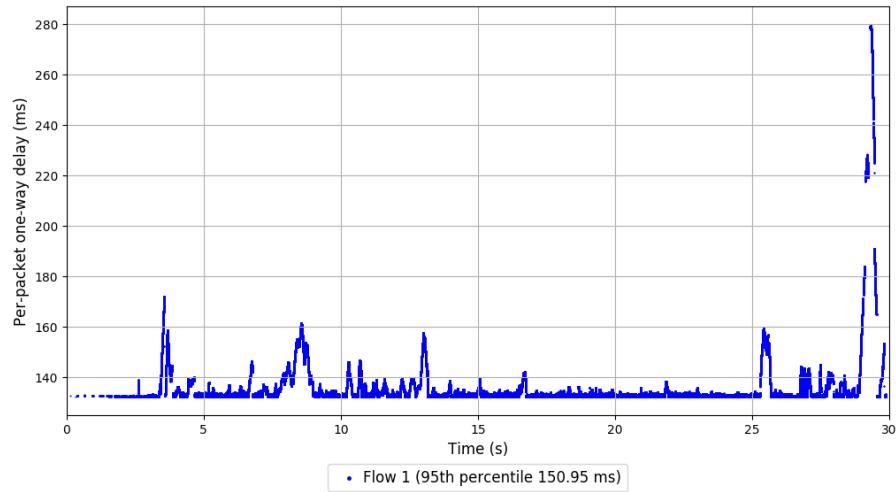
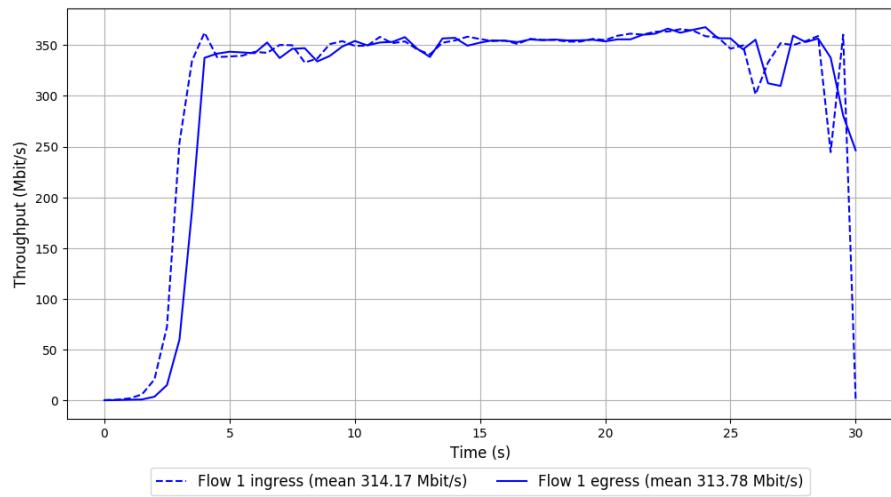


Run 3: Statistics of Copa

```
Start at: 2018-10-26 09:36:28
End at: 2018-10-26 09:36:58
Local clock offset: 0.355 ms
Remote clock offset: 0.333 ms

# Below is generated by plot.py at 2018-10-26 10:54:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 313.78 Mbit/s
95th percentile per-packet one-way delay: 150.954 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 313.78 Mbit/s
95th percentile per-packet one-way delay: 150.954 ms
Loss rate: 1.01%
```

Run 3: Report of Copa — Data Link

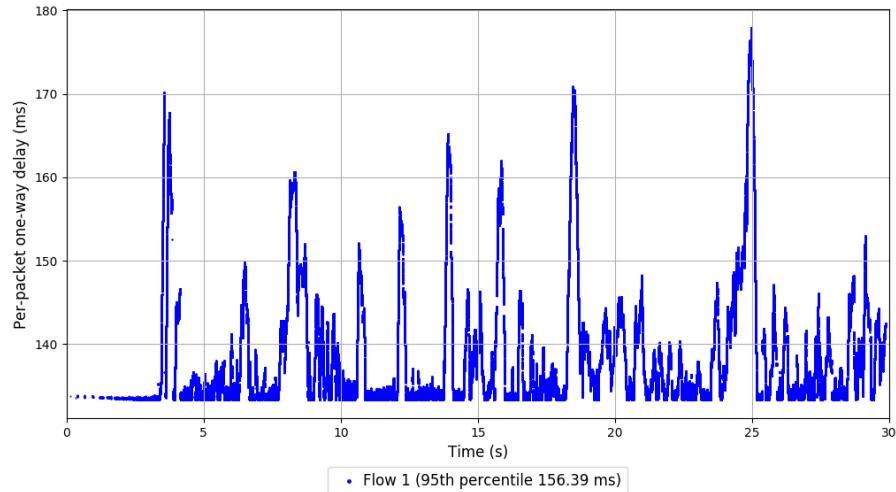
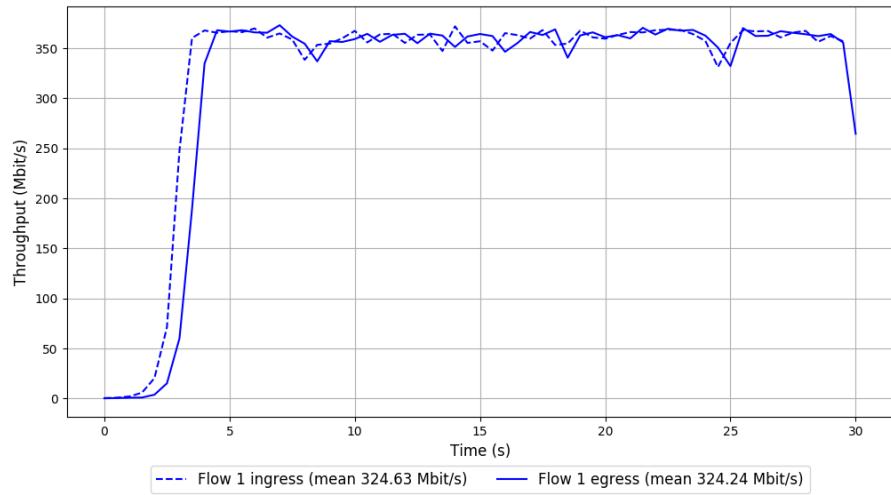


Run 4: Statistics of Copa

```
Start at: 2018-10-26 10:02:35
End at: 2018-10-26 10:03:05
Local clock offset: 0.001 ms
Remote clock offset: -0.526 ms

# Below is generated by plot.py at 2018-10-26 10:59:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 324.24 Mbit/s
95th percentile per-packet one-way delay: 156.391 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 324.24 Mbit/s
95th percentile per-packet one-way delay: 156.391 ms
Loss rate: 1.01%
```

Run 4: Report of Copa — Data Link

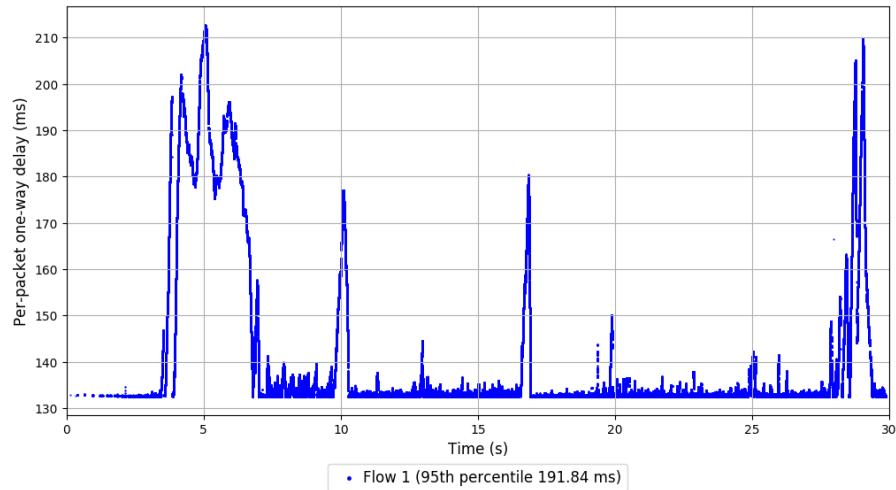
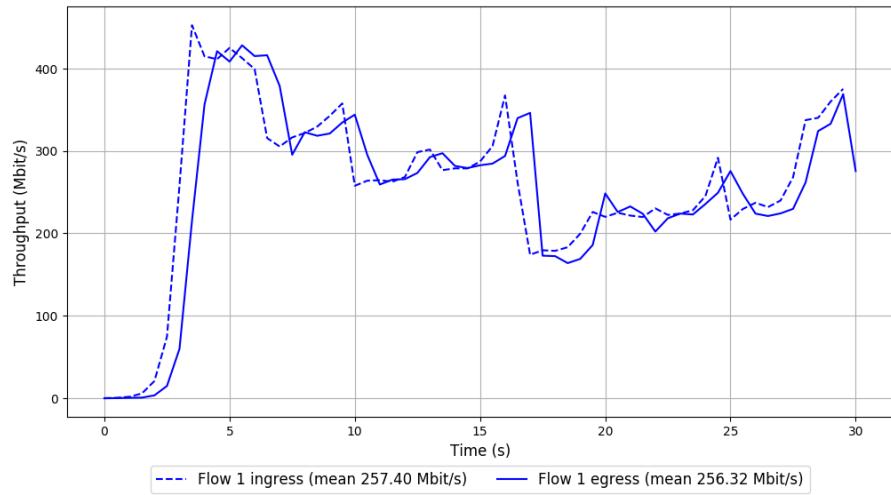


Run 5: Statistics of Copa

```
Start at: 2018-10-26 10:28:36
End at: 2018-10-26 10:29:06
Local clock offset: -0.022 ms
Remote clock offset: -0.543 ms

# Below is generated by plot.py at 2018-10-26 10:59:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 256.32 Mbit/s
95th percentile per-packet one-way delay: 191.837 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 256.32 Mbit/s
95th percentile per-packet one-way delay: 191.837 ms
Loss rate: 1.30%
```

Run 5: Report of Copa — Data Link

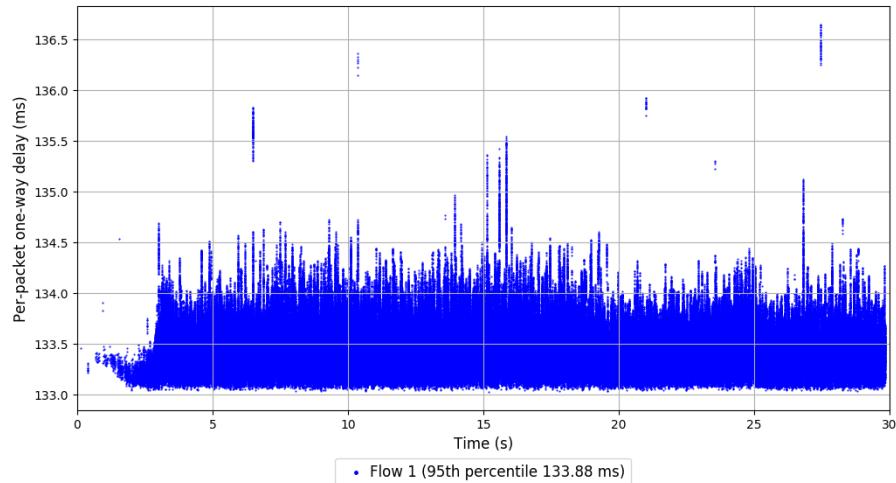
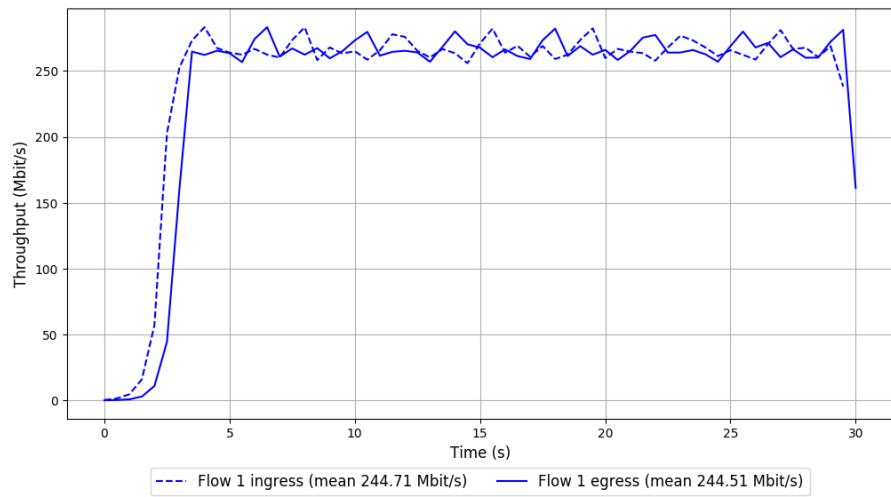


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-10-26 08:34:29
End at: 2018-10-26 08:34:59
Local clock offset: -0.102 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-10-26 10:59:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 244.51 Mbit/s
95th percentile per-packet one-way delay: 133.883 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 244.51 Mbit/s
95th percentile per-packet one-way delay: 133.883 ms
Loss rate: 0.97%
```

Run 1: Report of TCP Cubic — Data Link

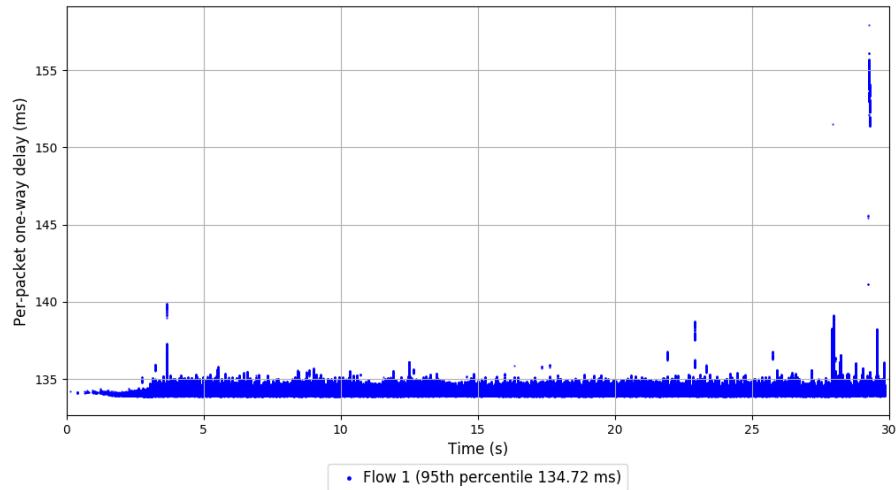
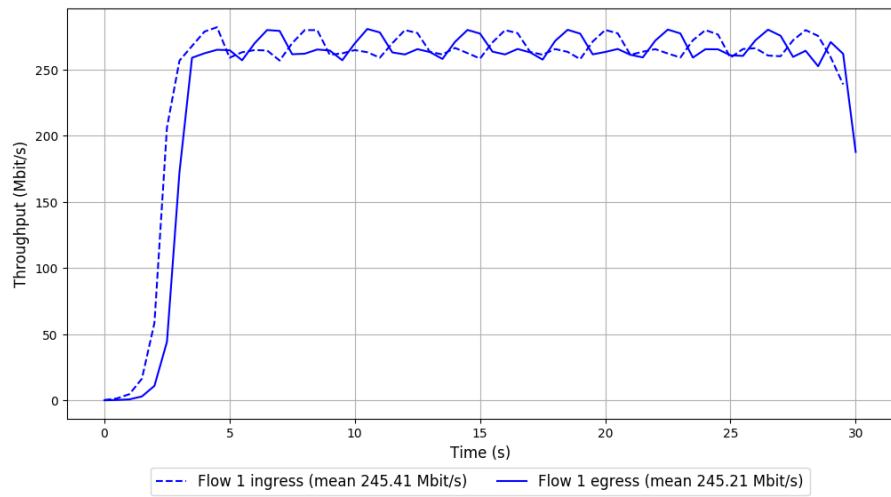


Run 2: Statistics of TCP Cubic

```
Start at: 2018-10-26 09:00:56
End at: 2018-10-26 09:01:26
Local clock offset: 0.914 ms
Remote clock offset: -0.177 ms

# Below is generated by plot.py at 2018-10-26 10:59:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.21 Mbit/s
95th percentile per-packet one-way delay: 134.719 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.21 Mbit/s
95th percentile per-packet one-way delay: 134.719 ms
Loss rate: 0.97%
```

Run 2: Report of TCP Cubic — Data Link

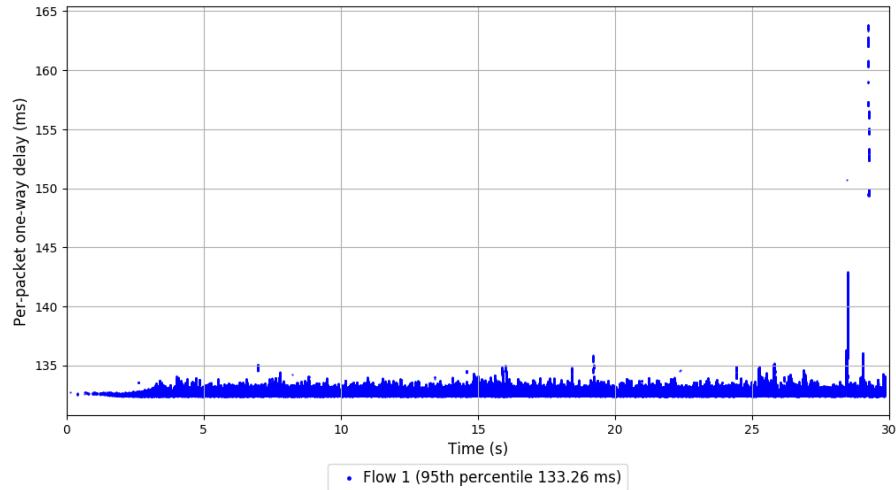
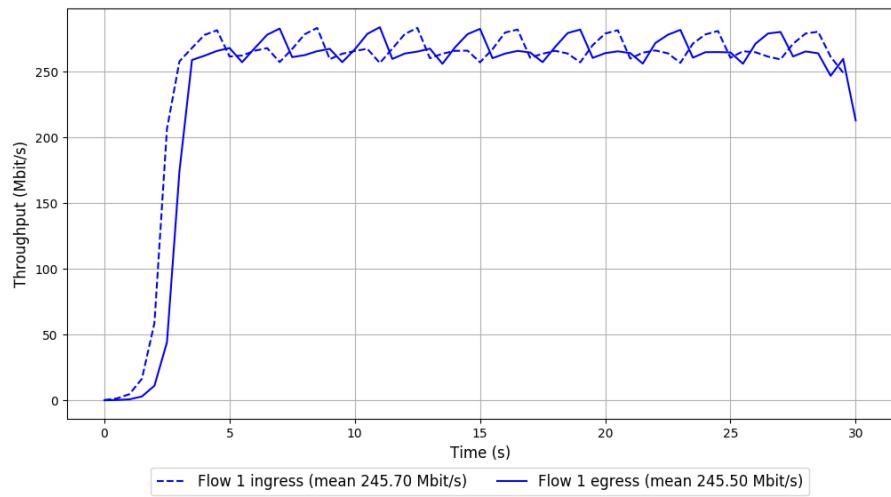


Run 3: Statistics of TCP Cubic

```
Start at: 2018-10-26 09:27:46
End at: 2018-10-26 09:28:16
Local clock offset: -0.389 ms
Remote clock offset: -0.434 ms

# Below is generated by plot.py at 2018-10-26 10:59:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.50 Mbit/s
95th percentile per-packet one-way delay: 133.264 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.50 Mbit/s
95th percentile per-packet one-way delay: 133.264 ms
Loss rate: 0.97%
```

Run 3: Report of TCP Cubic — Data Link

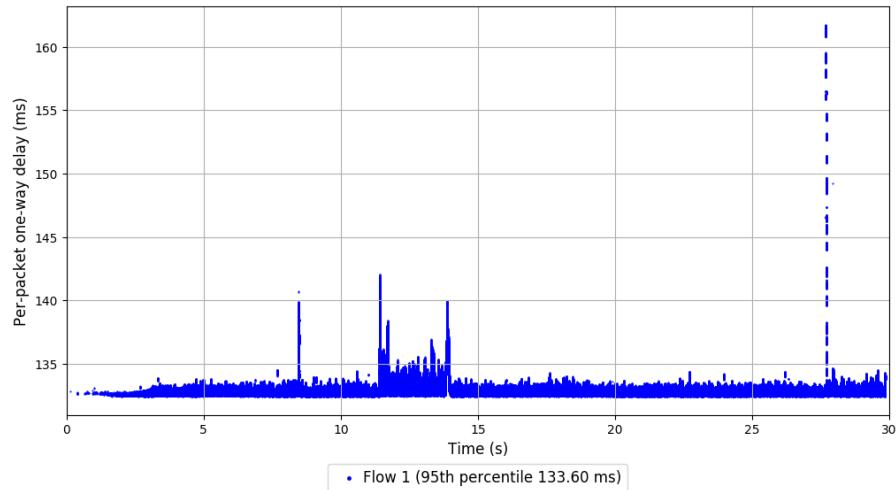
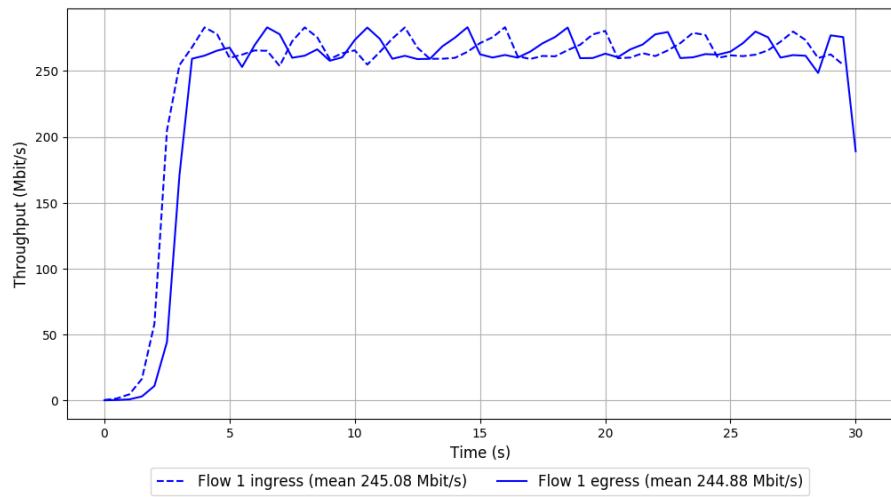


Run 4: Statistics of TCP Cubic

```
Start at: 2018-10-26 09:53:46
End at: 2018-10-26 09:54:16
Local clock offset: -0.666 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2018-10-26 10:59:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 244.88 Mbit/s
95th percentile per-packet one-way delay: 133.598 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 244.88 Mbit/s
95th percentile per-packet one-way delay: 133.598 ms
Loss rate: 0.97%
```

Run 4: Report of TCP Cubic — Data Link

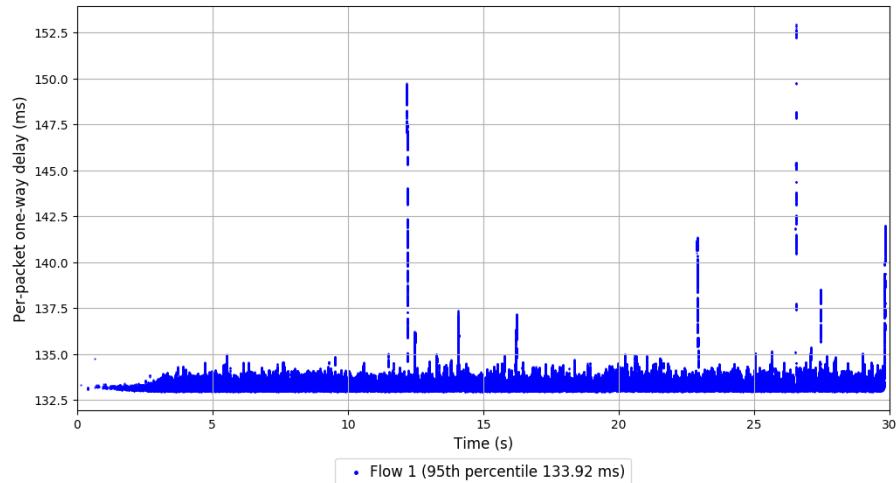
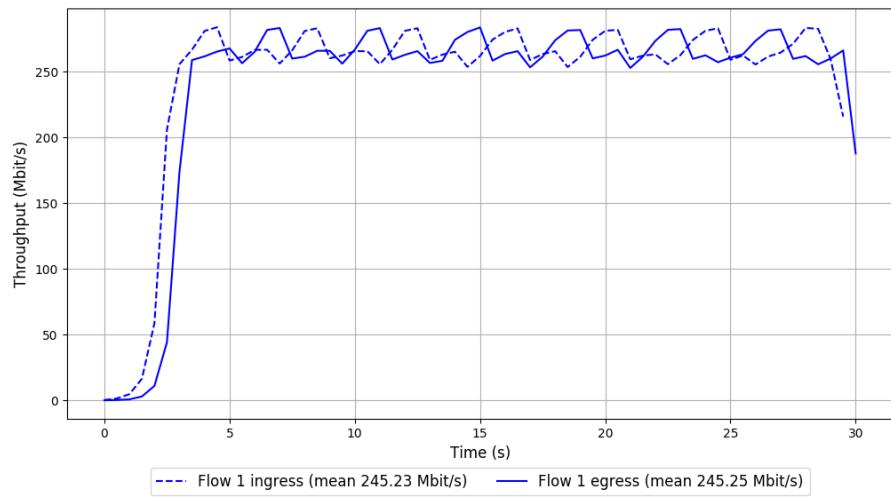


Run 5: Statistics of TCP Cubic

```
Start at: 2018-10-26 10:19:48
End at: 2018-10-26 10:20:18
Local clock offset: -0.304 ms
Remote clock offset: -0.504 ms

# Below is generated by plot.py at 2018-10-26 10:59:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.25 Mbit/s
95th percentile per-packet one-way delay: 133.923 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 245.25 Mbit/s
95th percentile per-packet one-way delay: 133.923 ms
Loss rate: 0.86%
```

Run 5: Report of TCP Cubic — Data Link

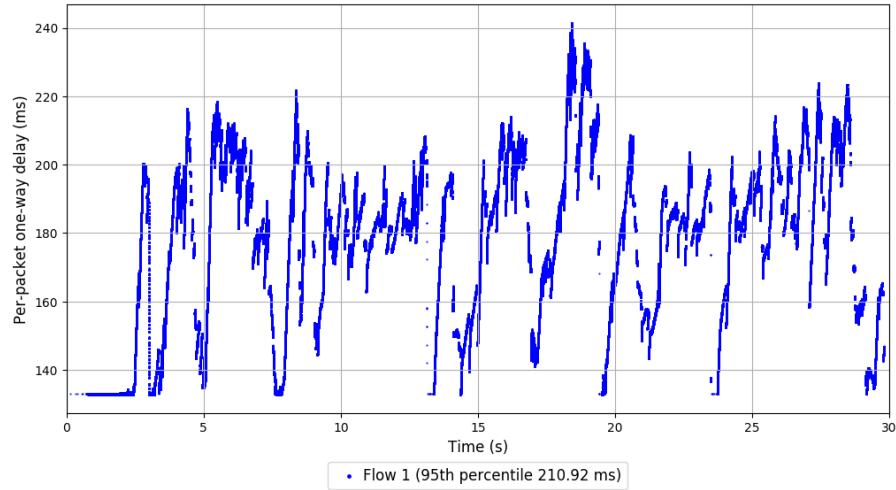
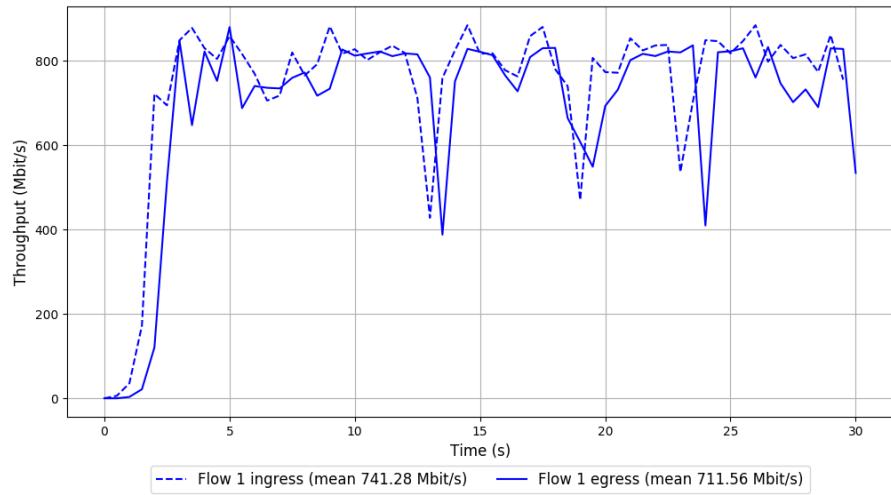


```
Run 1: Statistics of FillP

Start at: 2018-10-26 08:47:51
End at: 2018-10-26 08:48:21
Local clock offset: -0.235 ms
Remote clock offset: -0.137 ms

# Below is generated by plot.py at 2018-10-26 11:10:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 711.56 Mbit/s
95th percentile per-packet one-way delay: 210.919 ms
Loss rate: 4.86%
-- Flow 1:
Average throughput: 711.56 Mbit/s
95th percentile per-packet one-way delay: 210.919 ms
Loss rate: 4.86%
```

Run 1: Report of FillP — Data Link

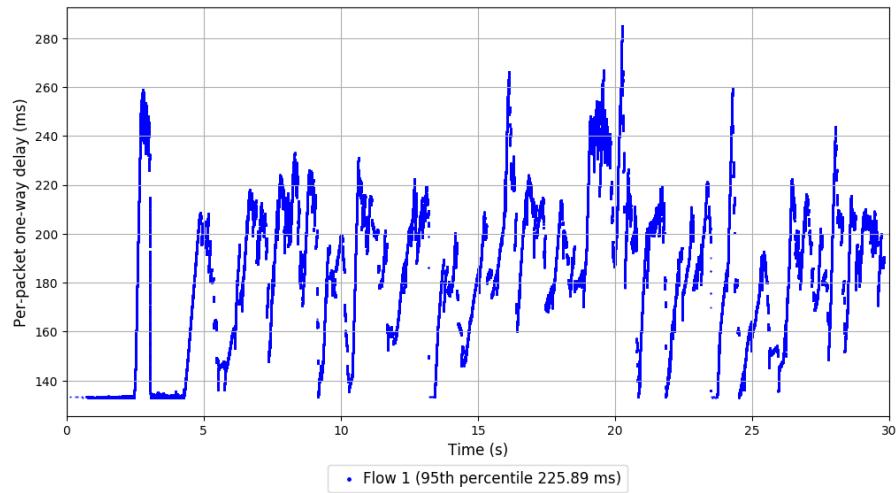
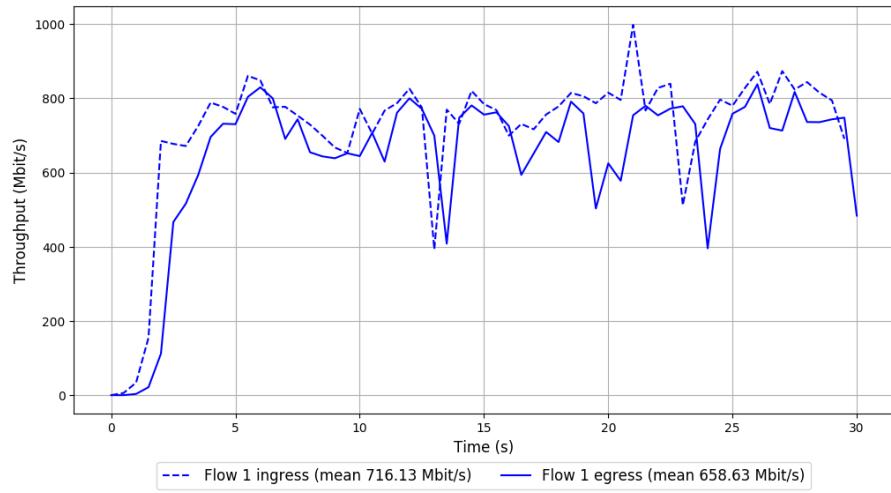


Run 2: Statistics of FillP

```
Start at: 2018-10-26 09:14:26
End at: 2018-10-26 09:14:56
Local clock offset: -0.336 ms
Remote clock offset: -0.511 ms

# Below is generated by plot.py at 2018-10-26 11:11:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 658.63 Mbit/s
95th percentile per-packet one-way delay: 225.894 ms
Loss rate: 8.85%
-- Flow 1:
Average throughput: 658.63 Mbit/s
95th percentile per-packet one-way delay: 225.894 ms
Loss rate: 8.85%
```

Run 2: Report of FillP — Data Link

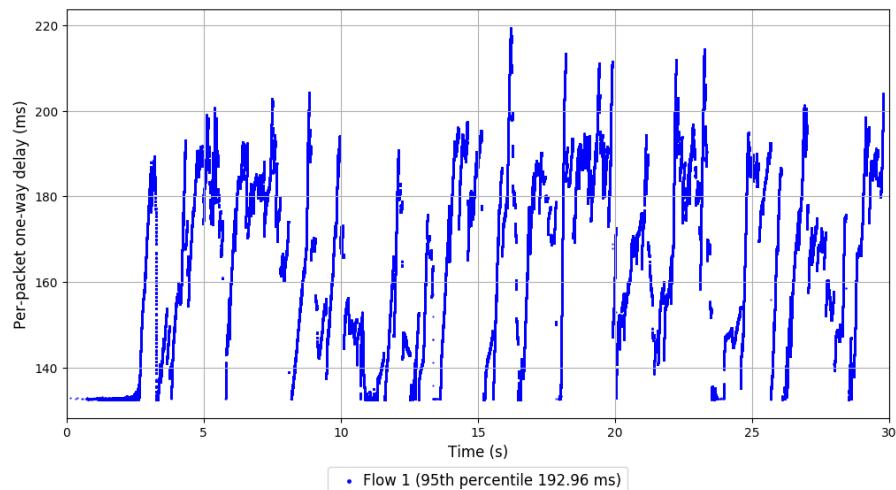
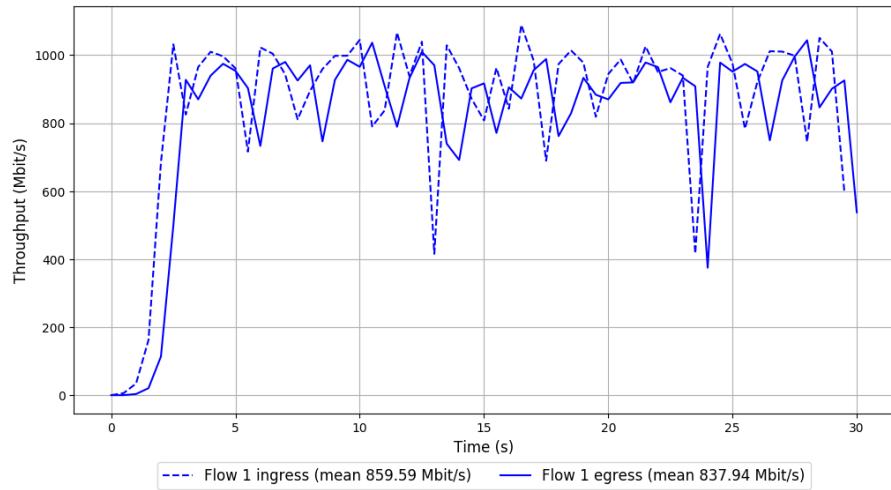


Run 3: Statistics of FillP

```
Start at: 2018-10-26 09:40:43
End at: 2018-10-26 09:41:13
Local clock offset: -0.366 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 837.94 Mbit/s
95th percentile per-packet one-way delay: 192.957 ms
Loss rate: 3.39%
-- Flow 1:
Average throughput: 837.94 Mbit/s
95th percentile per-packet one-way delay: 192.957 ms
Loss rate: 3.39%
```

Run 3: Report of FillP — Data Link

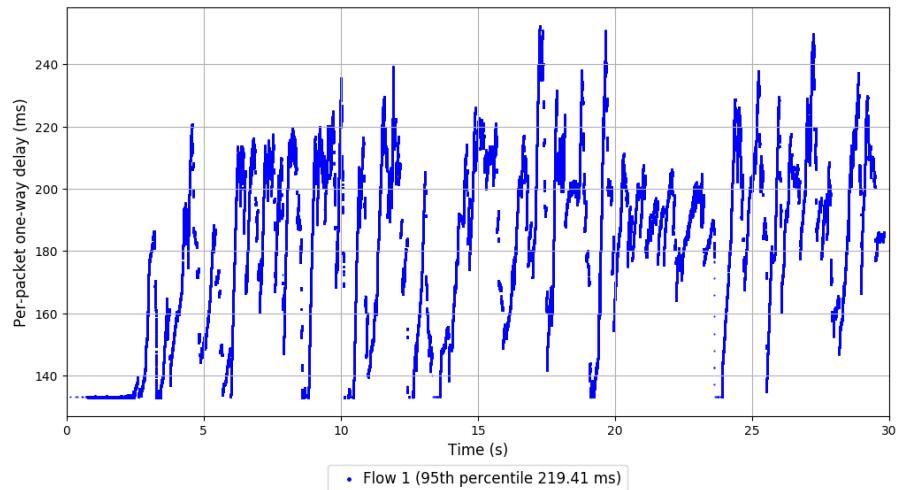
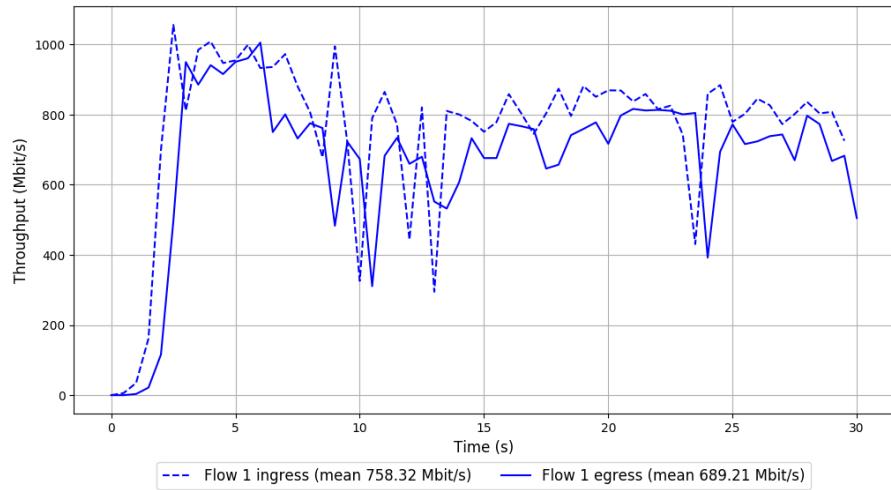


```
Run 4: Statistics of FillP
```

```
Start at: 2018-10-26 10:06:52
End at: 2018-10-26 10:07:22
Local clock offset: -0.023 ms
Remote clock offset: -0.099 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 689.21 Mbit/s
95th percentile per-packet one-way delay: 219.414 ms
Loss rate: 9.92%
-- Flow 1:
Average throughput: 689.21 Mbit/s
95th percentile per-packet one-way delay: 219.414 ms
Loss rate: 9.92%
```

Run 4: Report of FillP — Data Link

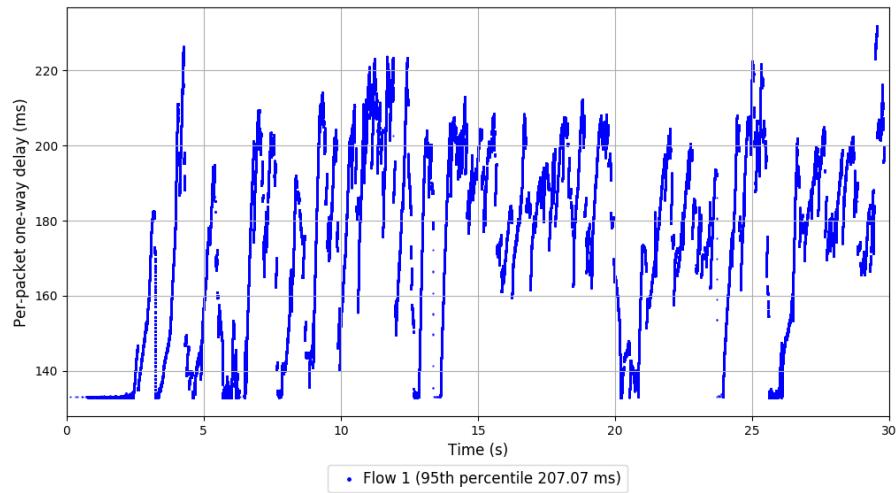
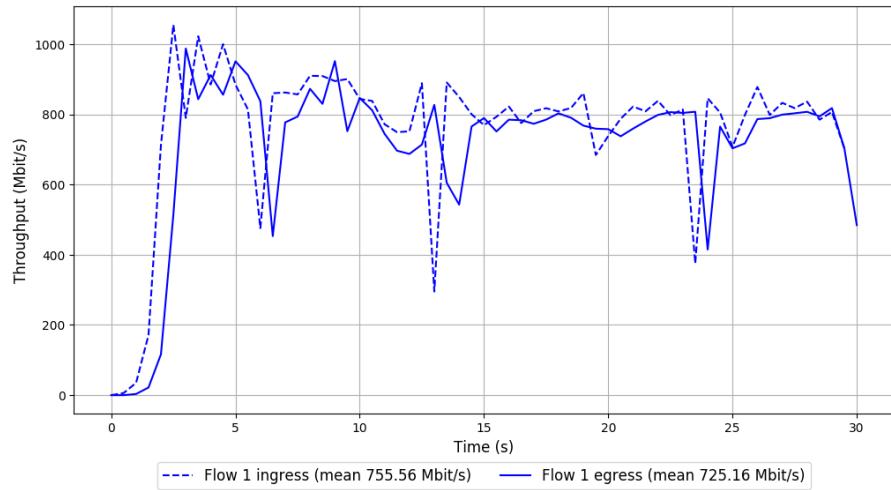


```
Run 5: Statistics of FillP
```

```
Start at: 2018-10-26 10:32:38
End at: 2018-10-26 10:33:08
Local clock offset: 0.389 ms
Remote clock offset: -0.132 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 725.16 Mbit/s
95th percentile per-packet one-way delay: 207.067 ms
Loss rate: 4.92%
-- Flow 1:
Average throughput: 725.16 Mbit/s
95th percentile per-packet one-way delay: 207.067 ms
Loss rate: 4.92%
```

Run 5: Report of FillP — Data Link

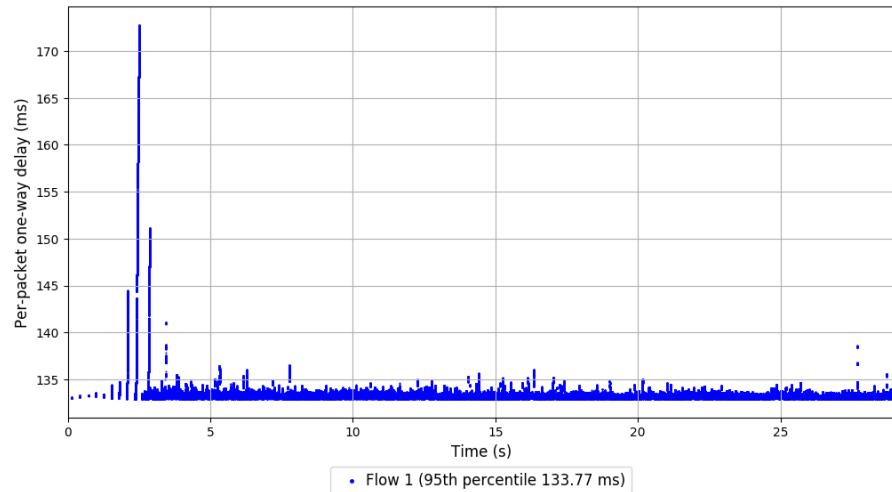
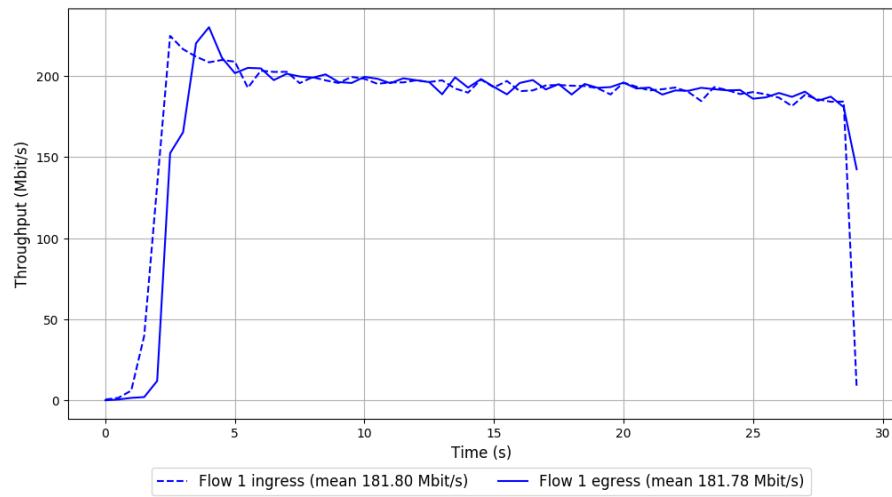


Run 1: Statistics of Indigo

```
Start at: 2018-10-26 08:49:35
End at: 2018-10-26 08:50:05
Local clock offset: -0.277 ms
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 181.78 Mbit/s
95th percentile per-packet one-way delay: 133.769 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 181.78 Mbit/s
95th percentile per-packet one-way delay: 133.769 ms
Loss rate: 0.93%
```

Run 1: Report of Indigo — Data Link

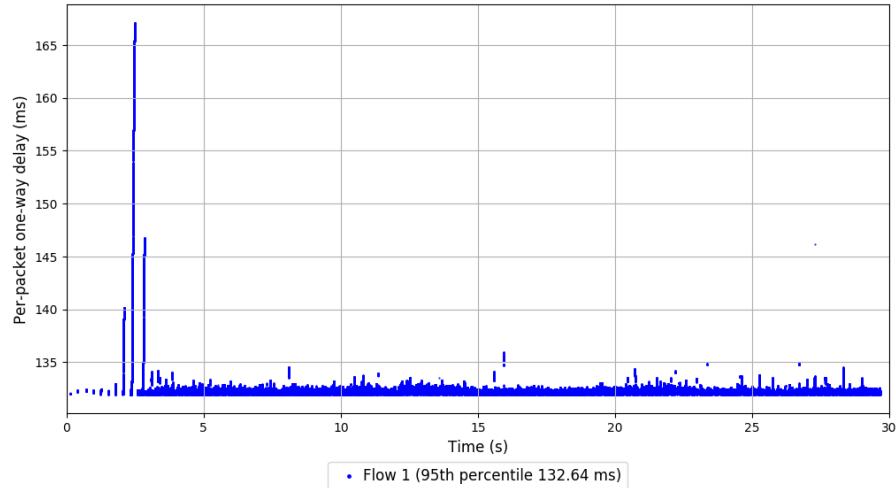
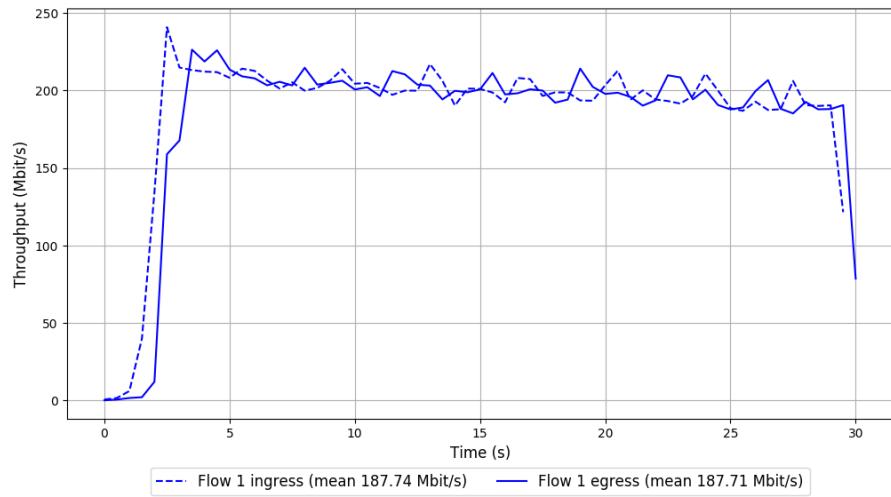


Run 2: Statistics of Indigo

```
Start at: 2018-10-26 09:16:08
End at: 2018-10-26 09:16:38
Local clock offset: -0.46 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.71 Mbit/s
95th percentile per-packet one-way delay: 132.642 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 187.71 Mbit/s
95th percentile per-packet one-way delay: 132.642 ms
Loss rate: 0.90%
```

Run 2: Report of Indigo — Data Link

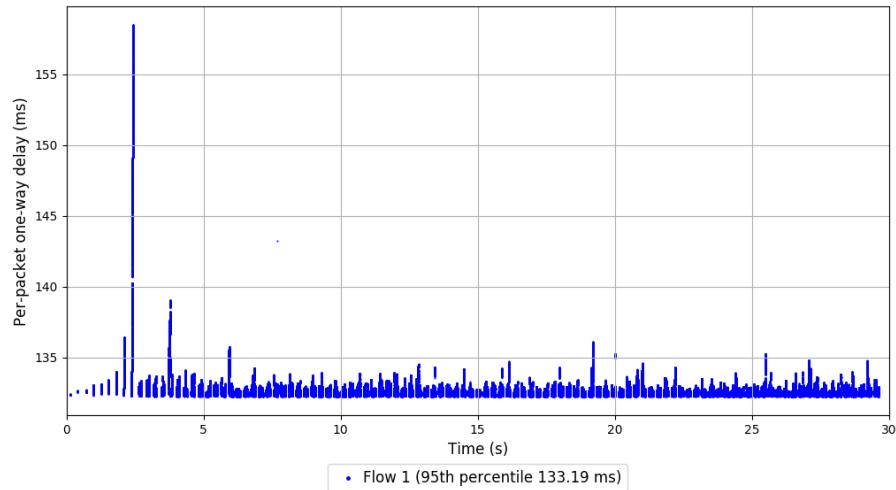
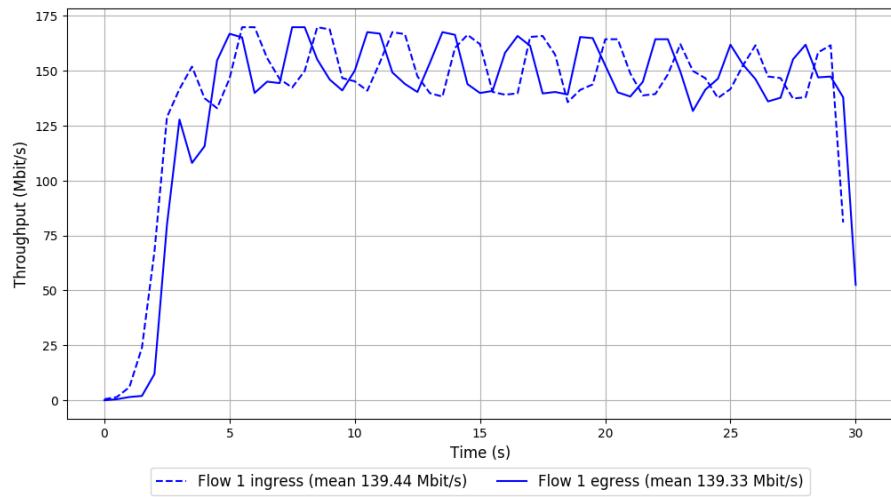


Run 3: Statistics of Indigo

```
Start at: 2018-10-26 09:42:35
End at: 2018-10-26 09:43:05
Local clock offset: -0.616 ms
Remote clock offset: -0.015 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 139.33 Mbit/s
95th percentile per-packet one-way delay: 133.190 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 139.33 Mbit/s
95th percentile per-packet one-way delay: 133.190 ms
Loss rate: 0.97%
```

Run 3: Report of Indigo — Data Link

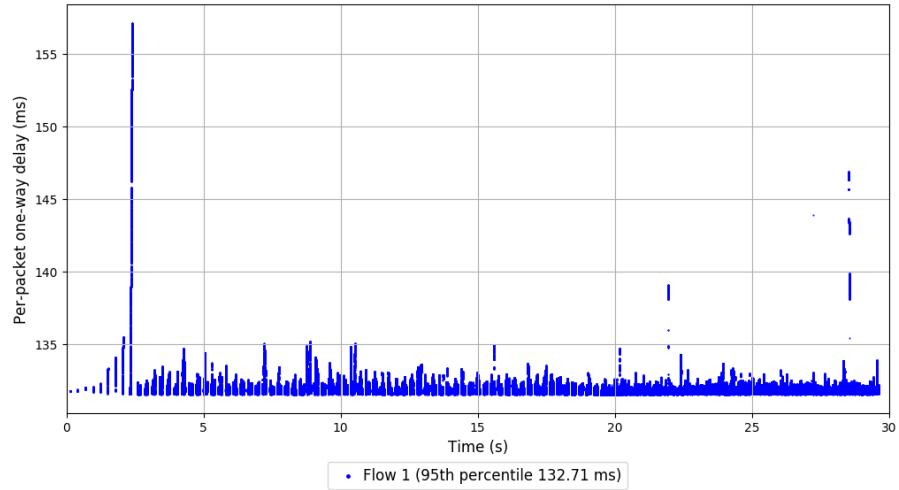
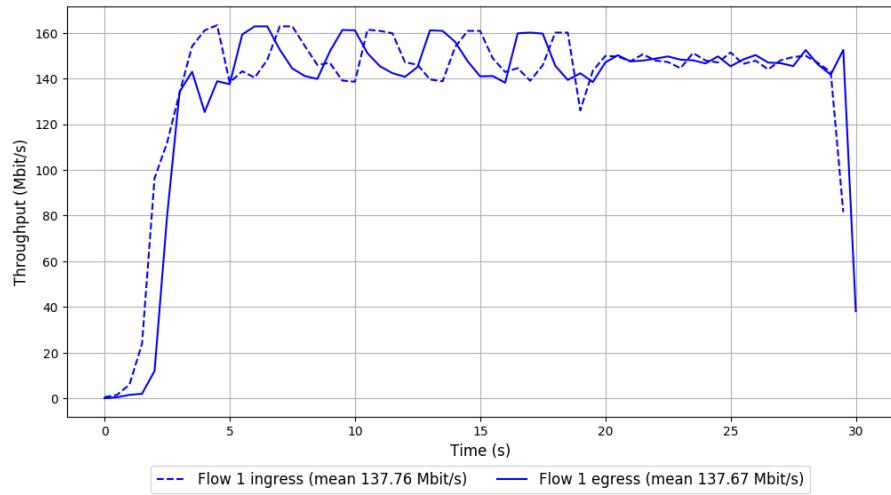


Run 4: Statistics of Indigo

```
Start at: 2018-10-26 10:08:37
End at: 2018-10-26 10:09:07
Local clock offset: -0.437 ms
Remote clock offset: 0.253 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 137.67 Mbit/s
95th percentile per-packet one-way delay: 132.711 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 137.67 Mbit/s
95th percentile per-packet one-way delay: 132.711 ms
Loss rate: 0.96%
```

Run 4: Report of Indigo — Data Link

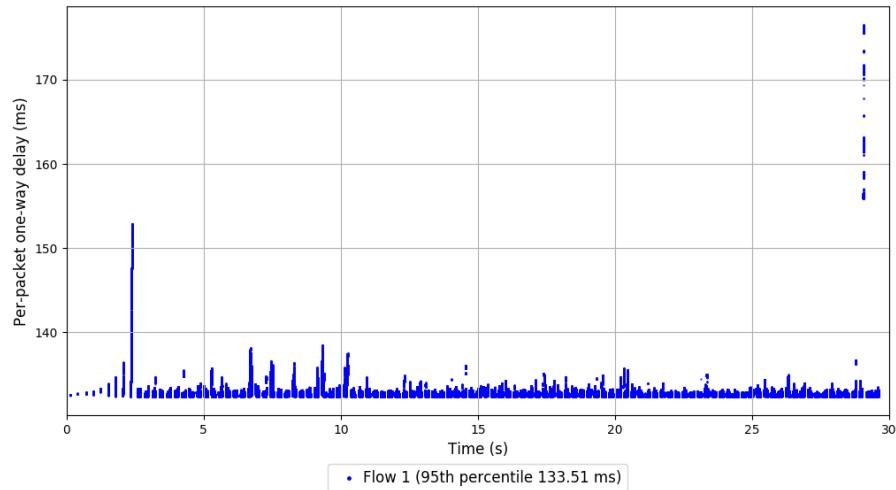
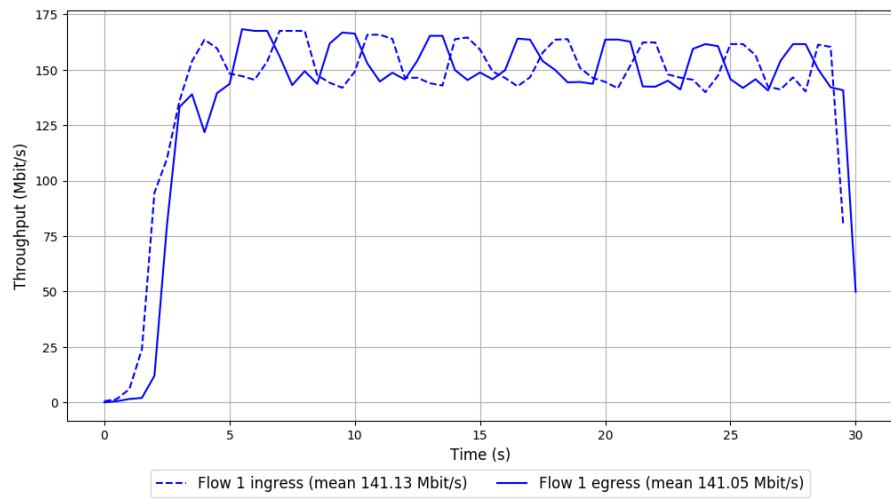


Run 5: Statistics of Indigo

```
Start at: 2018-10-26 10:34:27
End at: 2018-10-26 10:34:57
Local clock offset: -0.077 ms
Remote clock offset: -0.133 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 141.05 Mbit/s
95th percentile per-packet one-way delay: 133.512 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 141.05 Mbit/s
95th percentile per-packet one-way delay: 133.512 ms
Loss rate: 0.96%
```

Run 5: Report of Indigo — Data Link

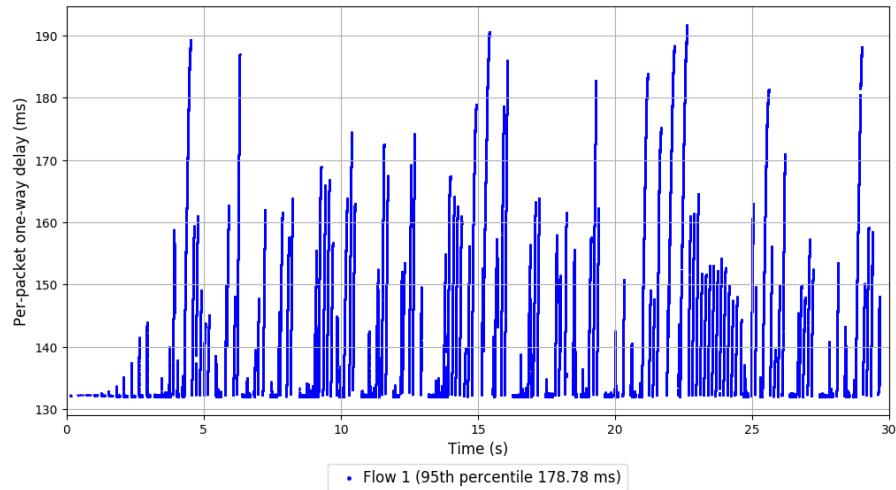
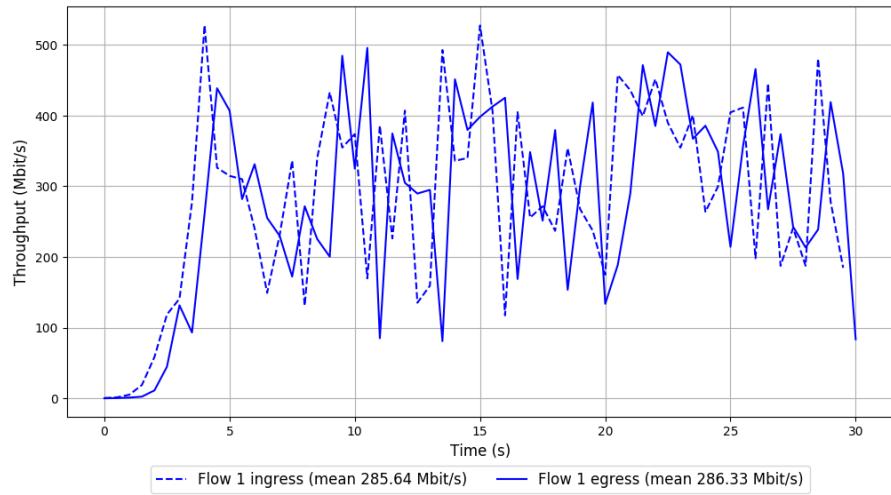


```
Run 1: Statistics of Indigo-96d2da3
```

```
Start at: 2018-10-26 08:28:24
End at: 2018-10-26 08:28:54
Local clock offset: -0.06 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 286.33 Mbit/s
95th percentile per-packet one-way delay: 178.777 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 286.33 Mbit/s
95th percentile per-packet one-way delay: 178.777 ms
Loss rate: 0.93%
```

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

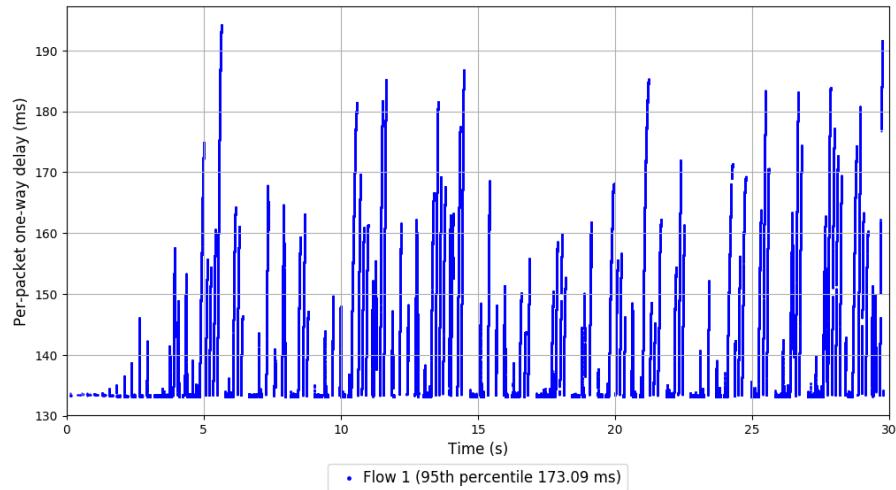
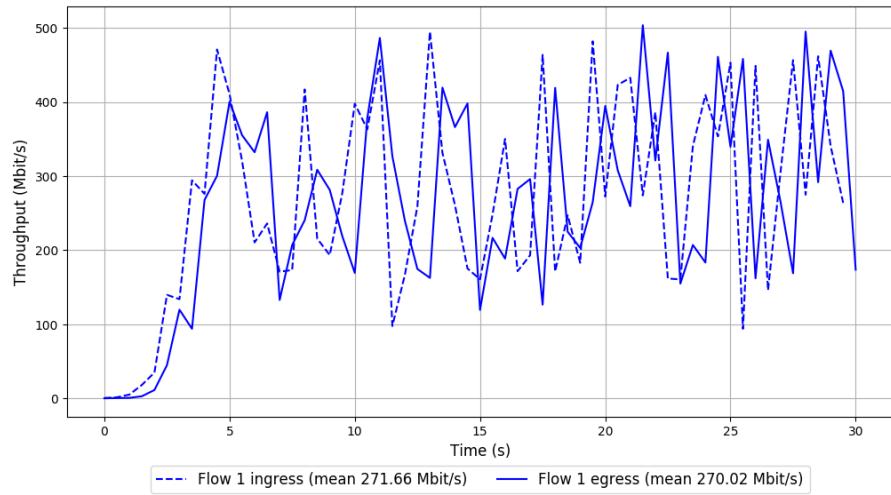


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-10-26 08:55:05
End at: 2018-10-26 08:55:35
Local clock offset: 0.365 ms
Remote clock offset: -0.141 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 270.02 Mbit/s
95th percentile per-packet one-way delay: 173.094 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 270.02 Mbit/s
95th percentile per-packet one-way delay: 173.094 ms
Loss rate: 0.73%
```

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

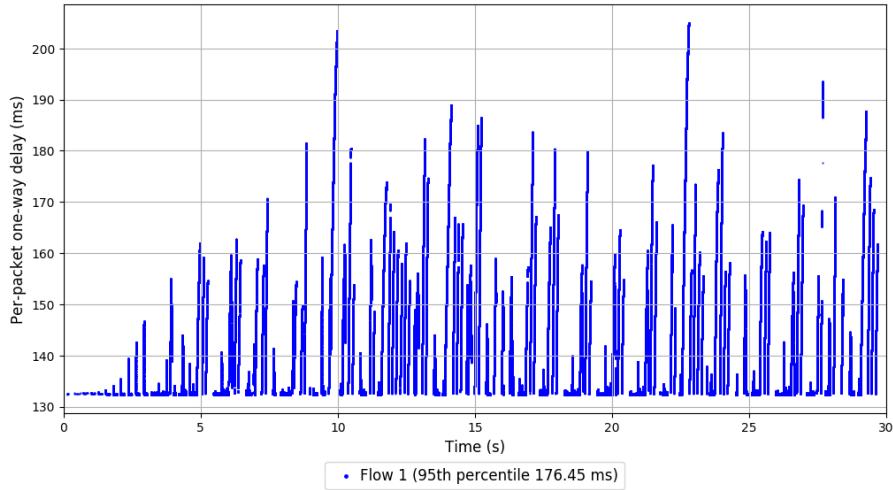
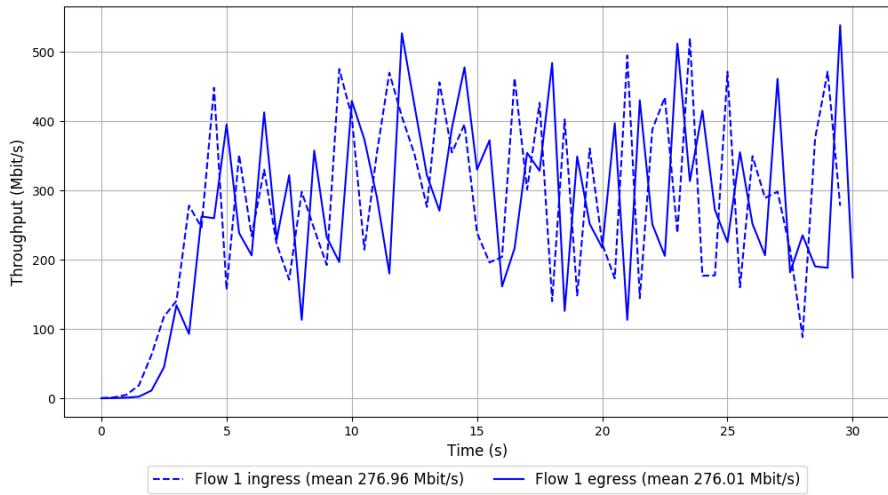


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-10-26 09:21:36
End at: 2018-10-26 09:22:06
Local clock offset: -0.48 ms
Remote clock offset: -0.109 ms

# Below is generated by plot.py at 2018-10-26 11:15:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 276.01 Mbit/s
95th percentile per-packet one-way delay: 176.448 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 276.01 Mbit/s
95th percentile per-packet one-way delay: 176.448 ms
Loss rate: 1.35%
```

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

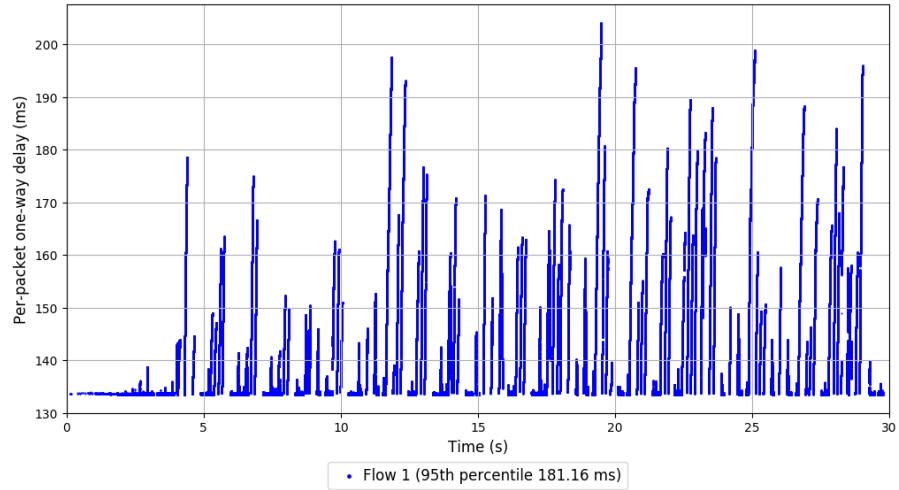
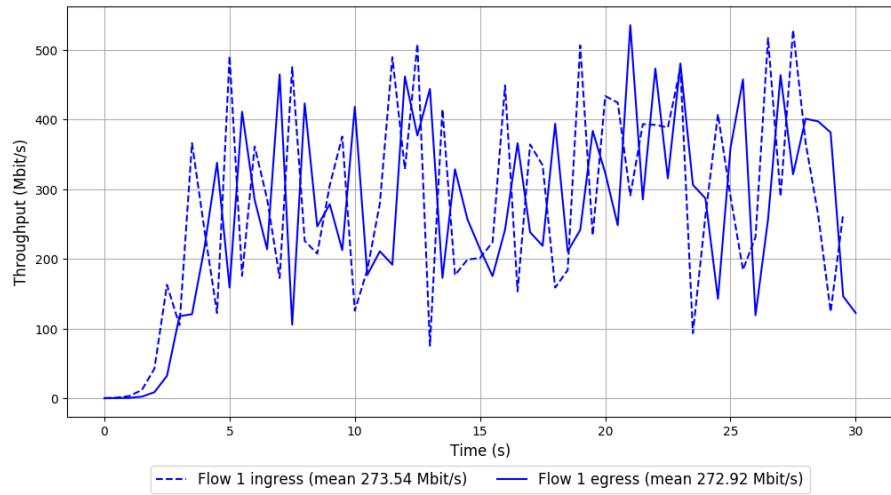


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-10-26 09:48:10
End at: 2018-10-26 09:48:40
Local clock offset: 0.336 ms
Remote clock offset: -0.346 ms

# Below is generated by plot.py at 2018-10-26 11:15:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 272.92 Mbit/s
95th percentile per-packet one-way delay: 181.165 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 272.92 Mbit/s
95th percentile per-packet one-way delay: 181.165 ms
Loss rate: 0.98%
```

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

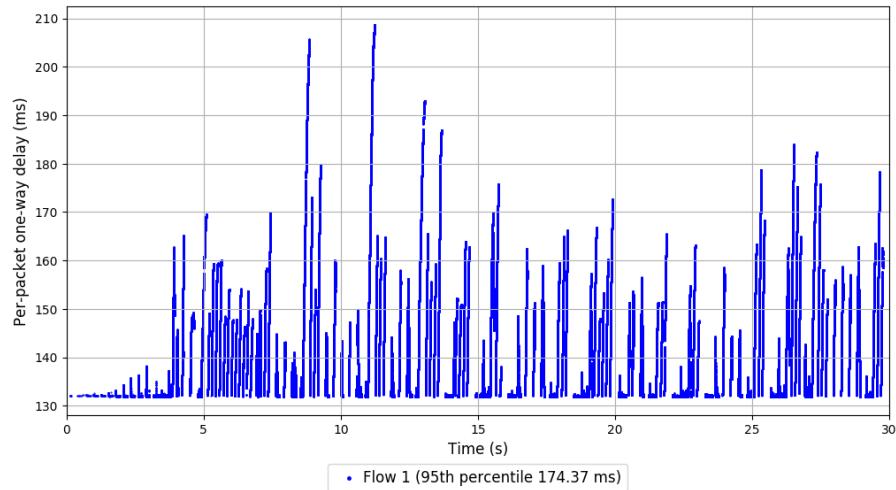
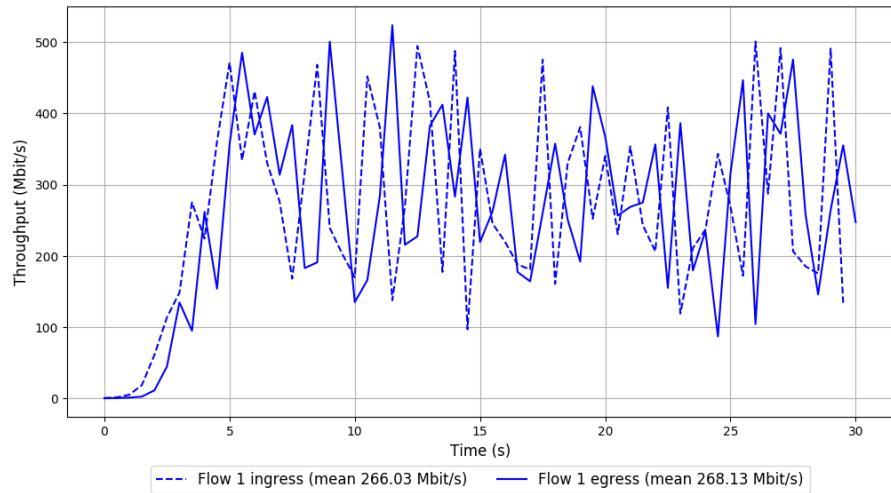


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-10-26 10:13:58
End at: 2018-10-26 10:14:28
Local clock offset: -0.661 ms
Remote clock offset: 0.244 ms

# Below is generated by plot.py at 2018-10-26 11:16:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 268.13 Mbit/s
95th percentile per-packet one-way delay: 174.372 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 268.13 Mbit/s
95th percentile per-packet one-way delay: 174.372 ms
Loss rate: 0.14%
```

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

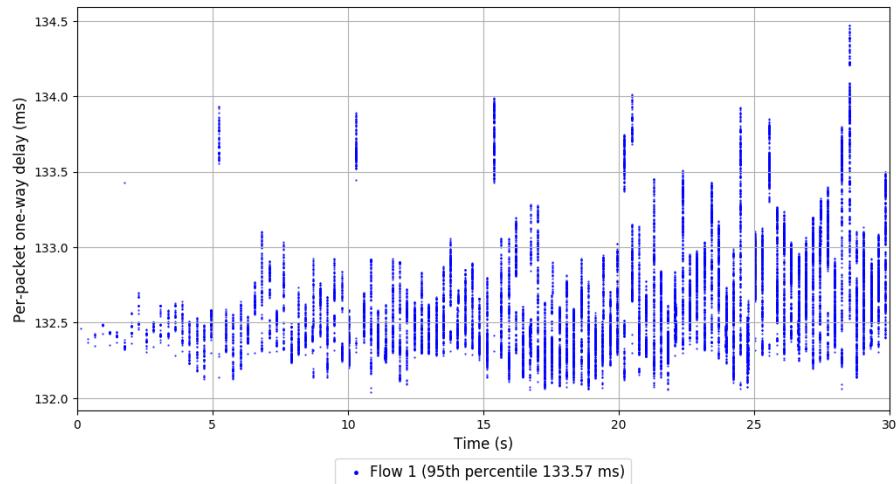
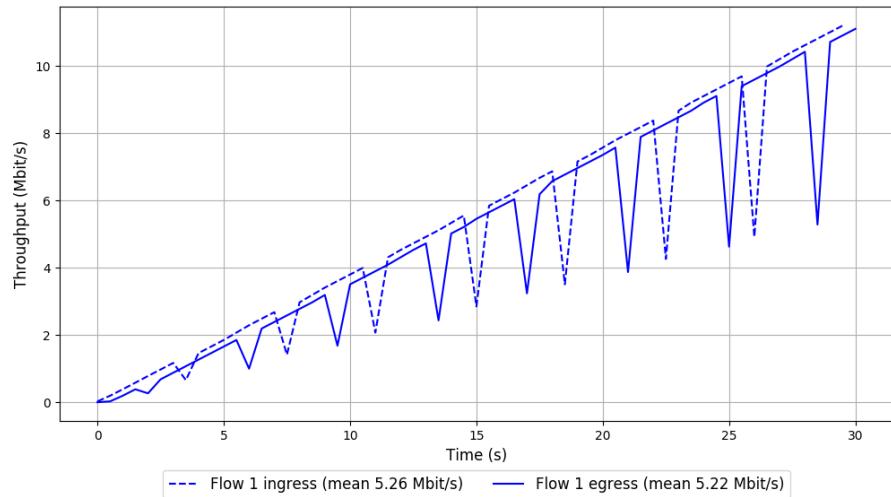


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-10-26 08:33:18
End at: 2018-10-26 08:33:48
Local clock offset: -1.099 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2018-10-26 11:16:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 133.570 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 133.570 ms
Loss rate: 1.78%
```

Run 1: Report of LEDBAT — Data Link

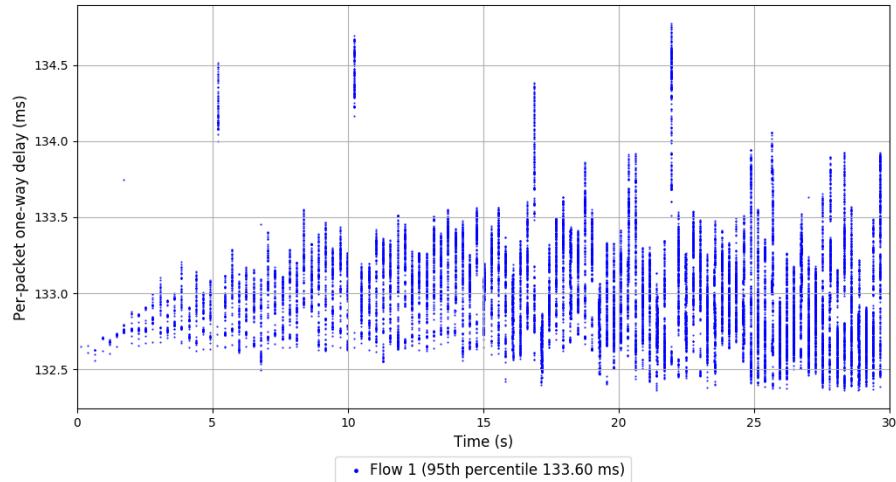
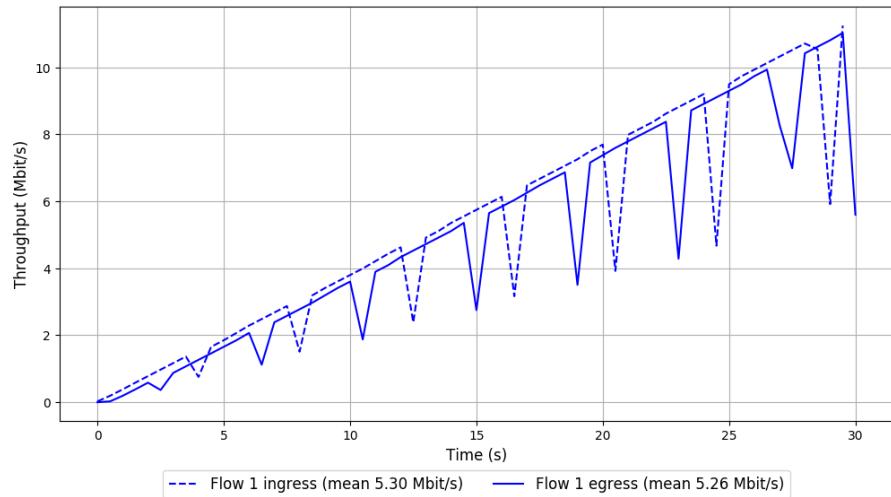


Run 2: Statistics of LEDBAT

```
Start at: 2018-10-26 08:59:45
End at: 2018-10-26 09:00:15
Local clock offset: -0.078 ms
Remote clock offset: -0.524 ms

# Below is generated by plot.py at 2018-10-26 11:16:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.26 Mbit/s
95th percentile per-packet one-way delay: 133.601 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 5.26 Mbit/s
95th percentile per-packet one-way delay: 133.601 ms
Loss rate: 1.79%
```

Run 2: Report of LEDBAT — Data Link

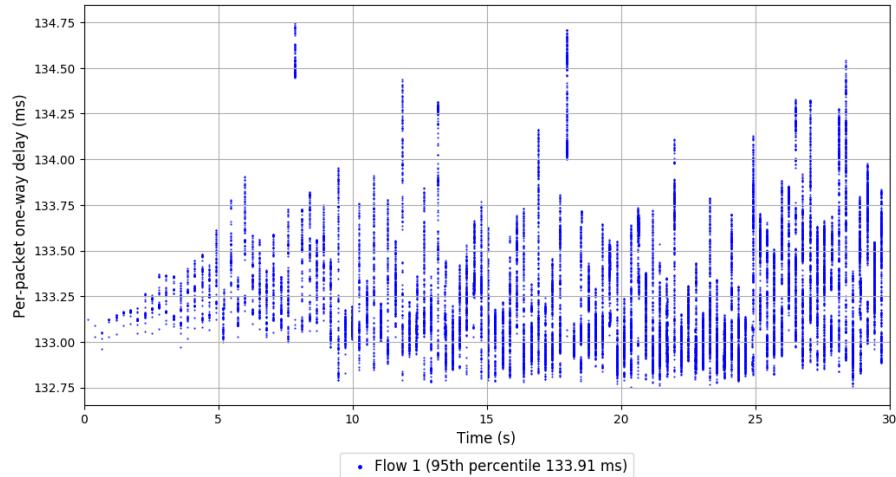
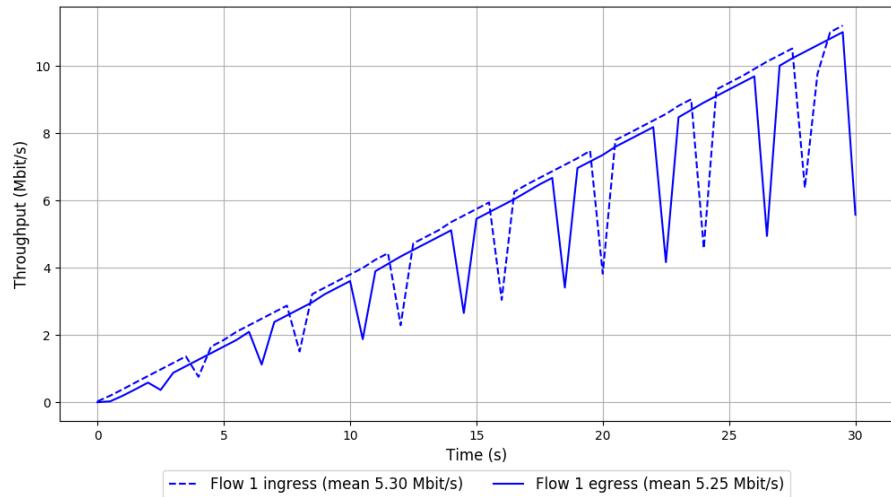


Run 3: Statistics of LEDBAT

```
Start at: 2018-10-26 09:26:35
End at: 2018-10-26 09:27:05
Local clock offset: 0.373 ms
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2018-10-26 11:16:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 133.908 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 133.908 ms
Loss rate: 1.78%
```

Run 3: Report of LEDBAT — Data Link

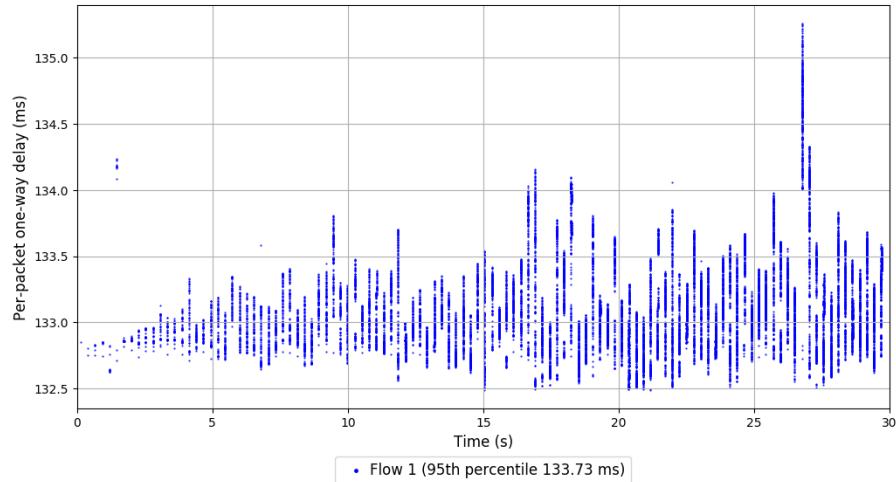
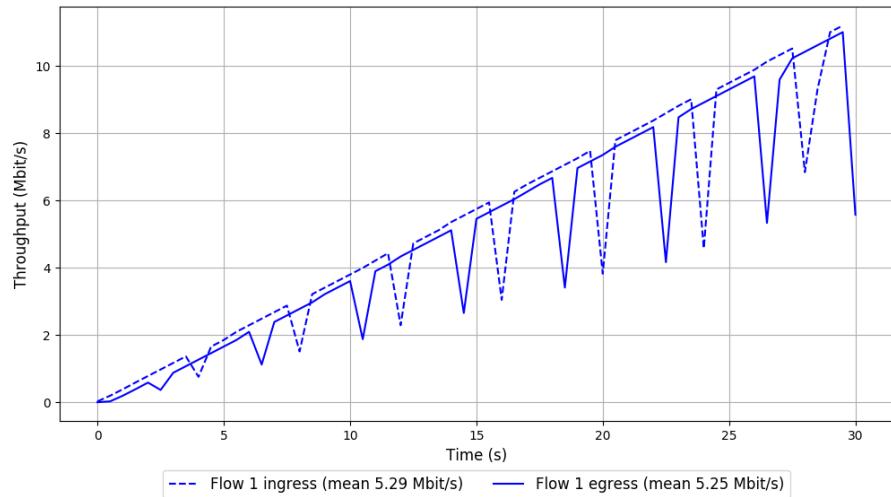


Run 4: Statistics of LEDBAT

```
Start at: 2018-10-26 09:52:35
End at: 2018-10-26 09:53:05
Local clock offset: 0.112 ms
Remote clock offset: -0.076 ms

# Below is generated by plot.py at 2018-10-26 11:16:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 133.732 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 133.732 ms
Loss rate: 1.78%
```

Run 4: Report of LEDBAT — Data Link

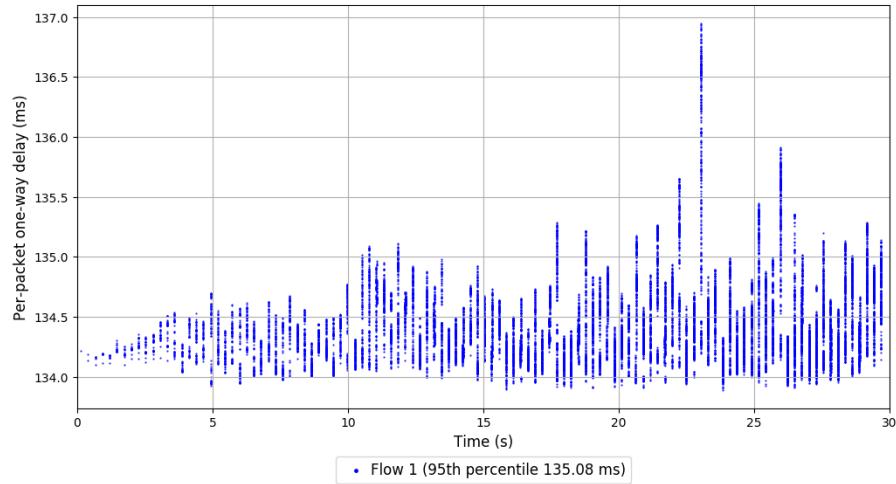
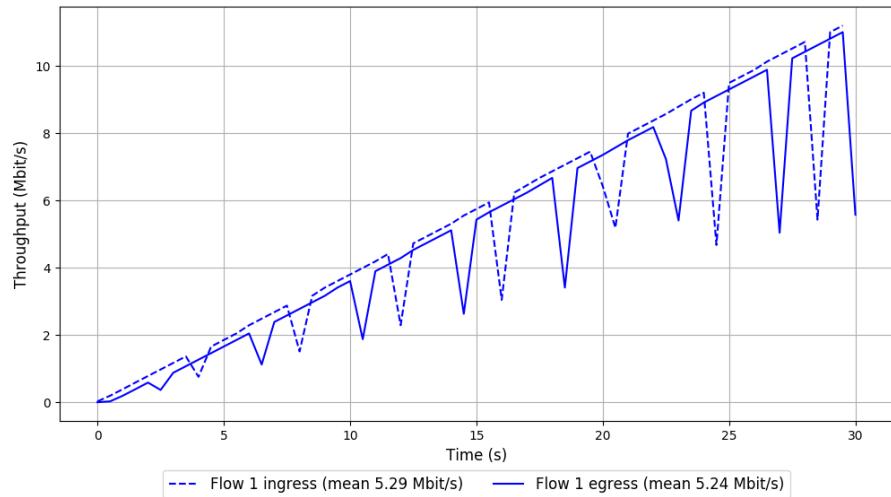


Run 5: Statistics of LEDBAT

```
Start at: 2018-10-26 10:18:37
End at: 2018-10-26 10:19:07
Local clock offset: 1.146 ms
Remote clock offset: -0.477 ms

# Below is generated by plot.py at 2018-10-26 11:16:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 135.076 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 135.076 ms
Loss rate: 1.78%
```

Run 5: Report of LEDBAT — Data Link

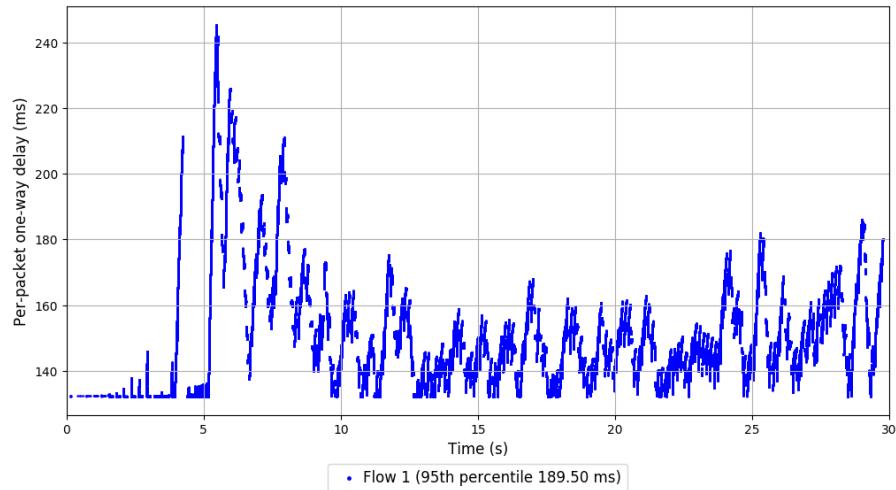
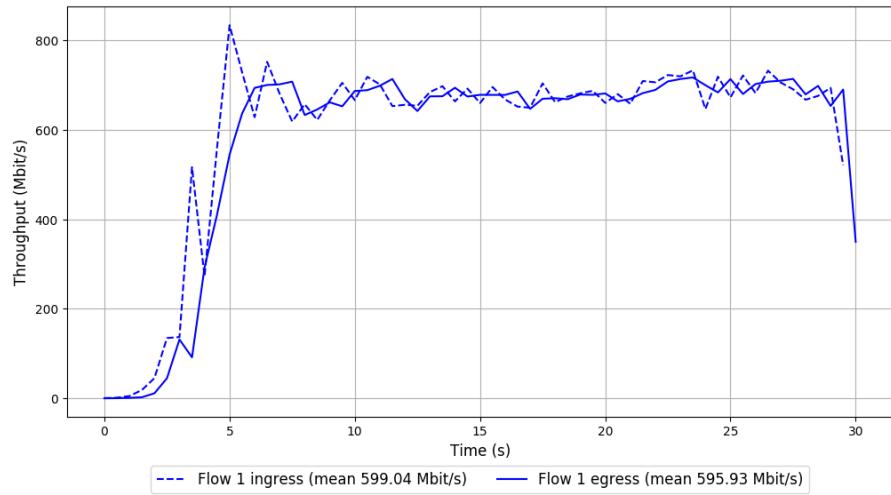


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-10-26 08:37:03
End at: 2018-10-26 08:37:33
Local clock offset: -0.751 ms
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-10-26 11:23:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 595.93 Mbit/s
95th percentile per-packet one-way delay: 189.495 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 595.93 Mbit/s
95th percentile per-packet one-way delay: 189.495 ms
Loss rate: 1.40%
```

Run 1: Report of Indigo-Muses — Data Link

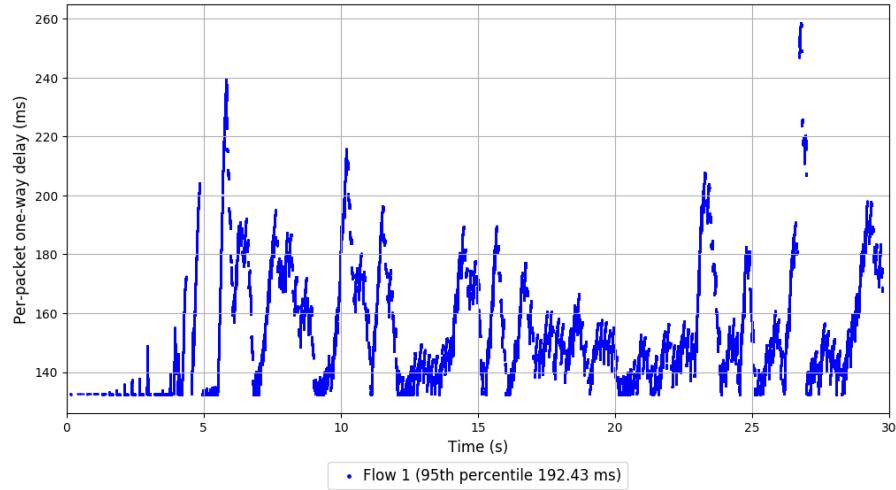
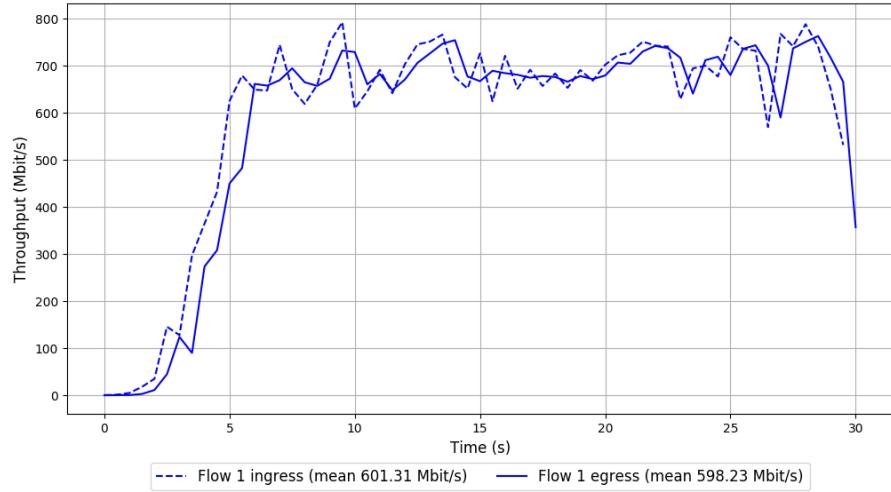


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-10-26 09:03:33
End at: 2018-10-26 09:04:03
Local clock offset: -0.309 ms
Remote clock offset: 0.198 ms

# Below is generated by plot.py at 2018-10-26 11:23:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 598.23 Mbit/s
95th percentile per-packet one-way delay: 192.432 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 598.23 Mbit/s
95th percentile per-packet one-way delay: 192.432 ms
Loss rate: 1.40%
```

Run 2: Report of Indigo-Muses — Data Link

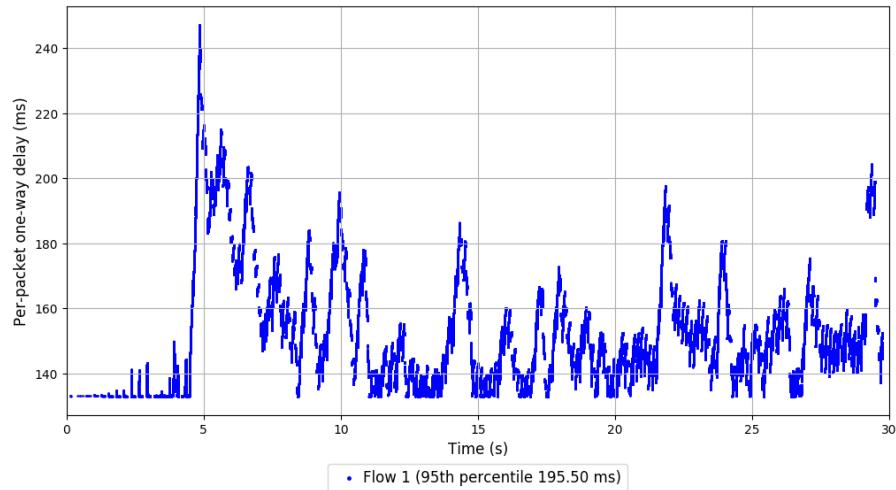
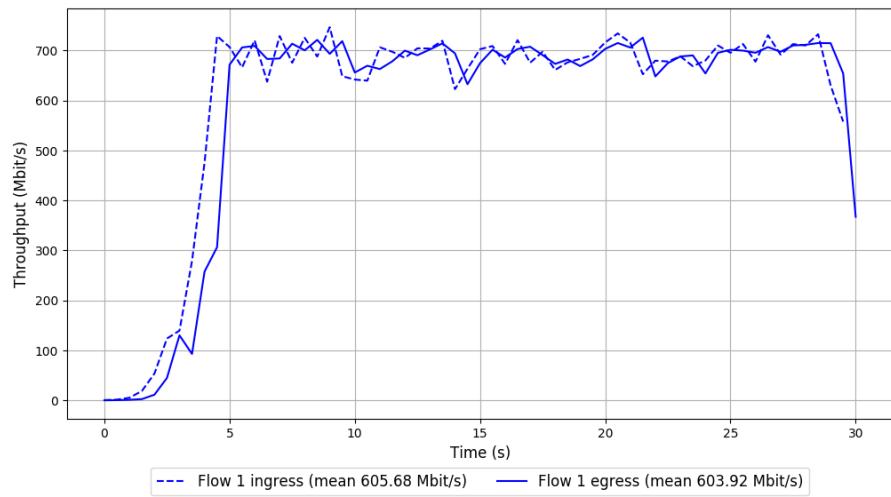


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-10-26 09:30:20
End at: 2018-10-26 09:30:50
Local clock offset: -0.438 ms
Remote clock offset: -0.396 ms

# Below is generated by plot.py at 2018-10-26 11:27:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 603.92 Mbit/s
95th percentile per-packet one-way delay: 195.501 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 603.92 Mbit/s
95th percentile per-packet one-way delay: 195.501 ms
Loss rate: 1.18%
```

Run 3: Report of Indigo-Muses — Data Link

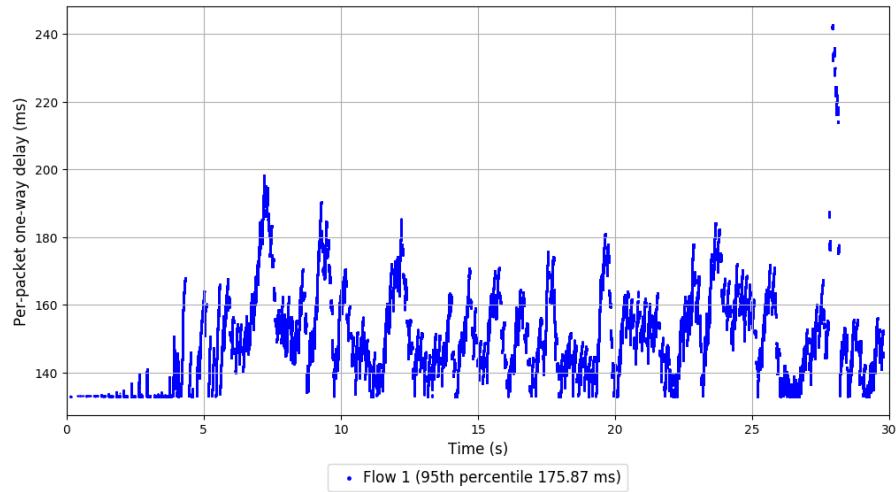
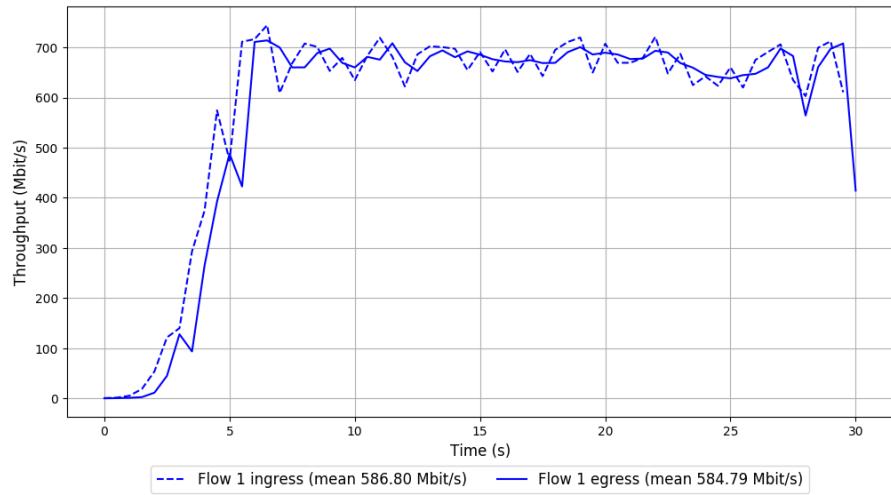


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-10-26 09:56:20
End at: 2018-10-26 09:56:50
Local clock offset: -0.215 ms
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2018-10-26 11:27:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 584.79 Mbit/s
95th percentile per-packet one-way delay: 175.867 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 584.79 Mbit/s
95th percentile per-packet one-way delay: 175.867 ms
Loss rate: 1.21%
```

Run 4: Report of Indigo-Muses — Data Link

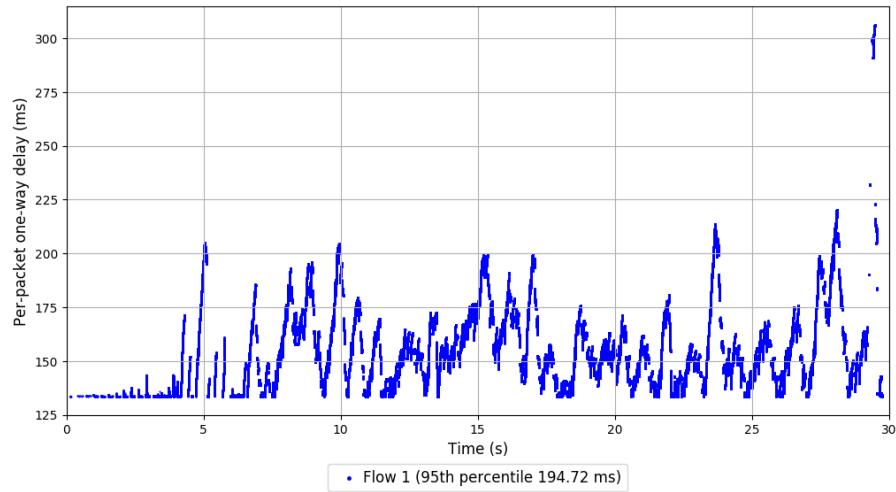
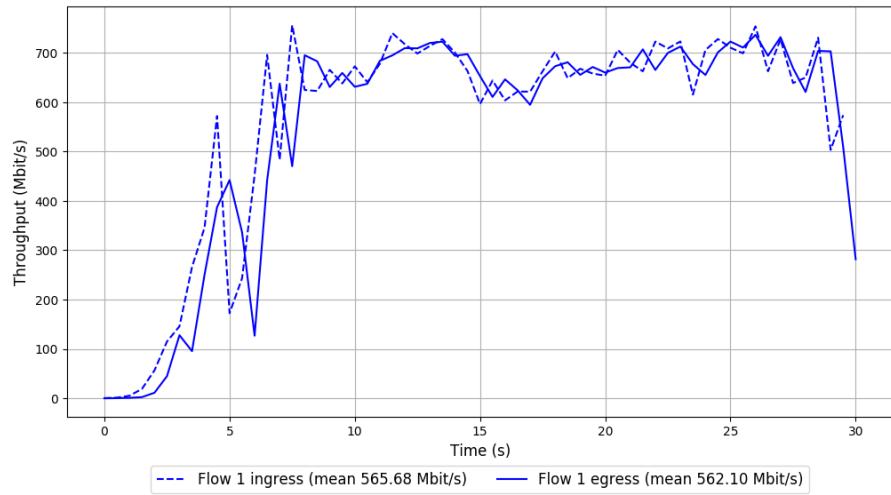


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-10-26 10:22:24
End at: 2018-10-26 10:22:54
Local clock offset: 0.541 ms
Remote clock offset: -0.11 ms

# Below is generated by plot.py at 2018-10-26 11:27:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 562.10 Mbit/s
95th percentile per-packet one-way delay: 194.716 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 562.10 Mbit/s
95th percentile per-packet one-way delay: 194.716 ms
Loss rate: 1.52%
```

Run 5: Report of Indigo-Muses — Data Link

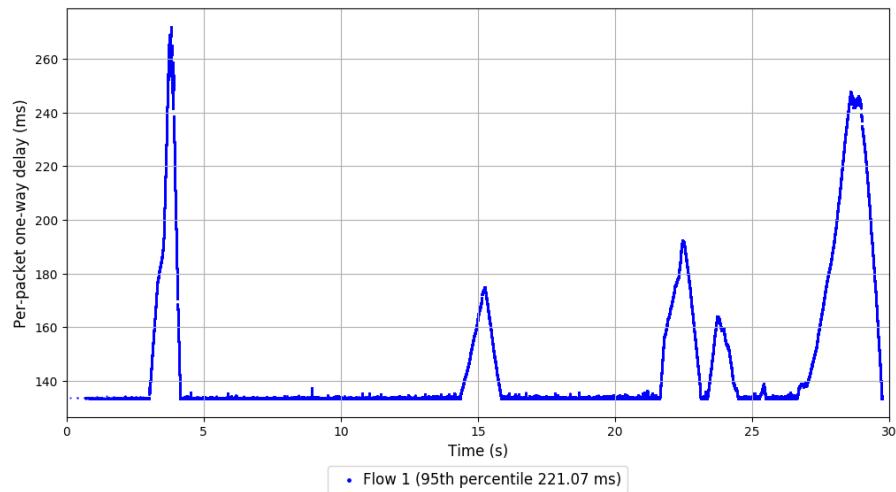
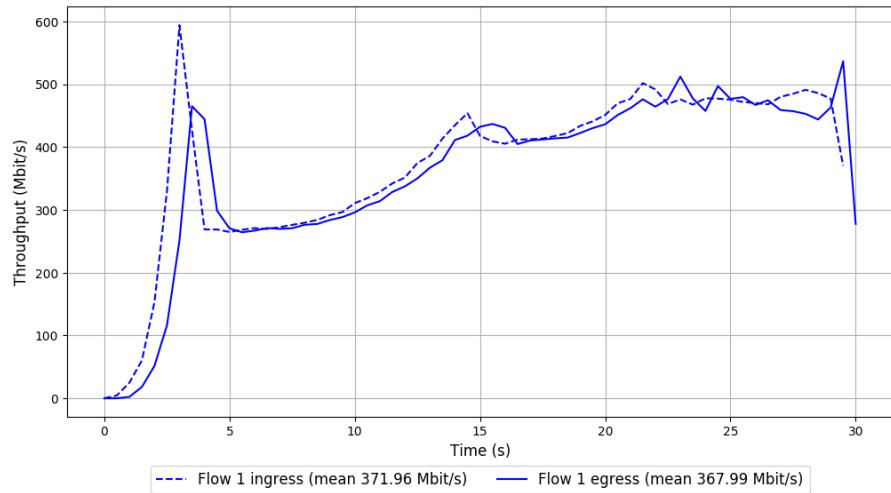


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-10-26 08:41:47
End at: 2018-10-26 08:42:17
Local clock offset: 1.314 ms
Remote clock offset: 0.248 ms

# Below is generated by plot.py at 2018-10-26 11:29:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 367.99 Mbit/s
95th percentile per-packet one-way delay: 221.074 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 367.99 Mbit/s
95th percentile per-packet one-way delay: 221.074 ms
Loss rate: 1.95%
```

Run 1: Report of PCC-Allegro — Data Link

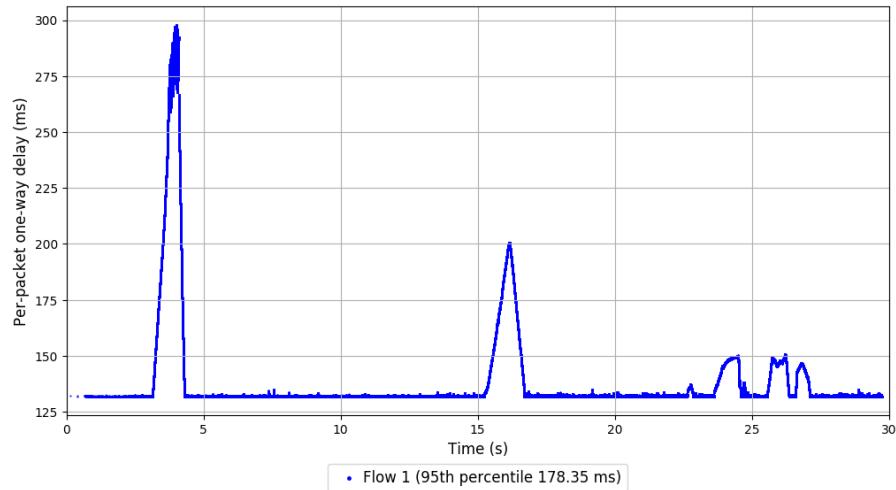
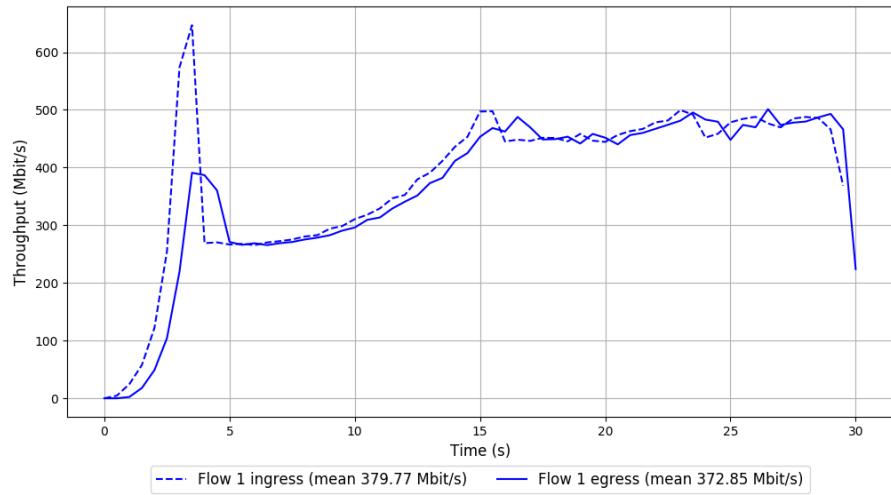


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-10-26 09:08:28
End at: 2018-10-26 09:08:58
Local clock offset: -1.098 ms
Remote clock offset: -0.197 ms

# Below is generated by plot.py at 2018-10-26 11:29:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 372.85 Mbit/s
95th percentile per-packet one-way delay: 178.346 ms
Loss rate: 2.72%
-- Flow 1:
Average throughput: 372.85 Mbit/s
95th percentile per-packet one-way delay: 178.346 ms
Loss rate: 2.72%
```

Run 2: Report of PCC-Allegro — Data Link

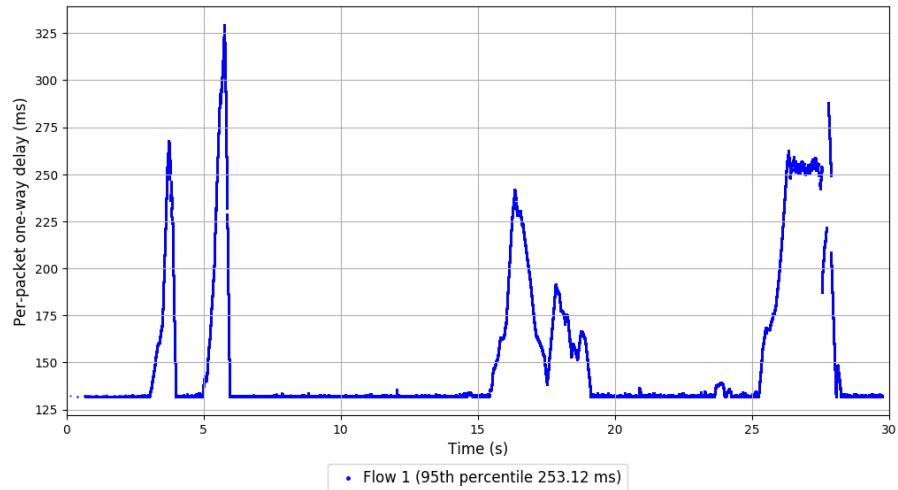
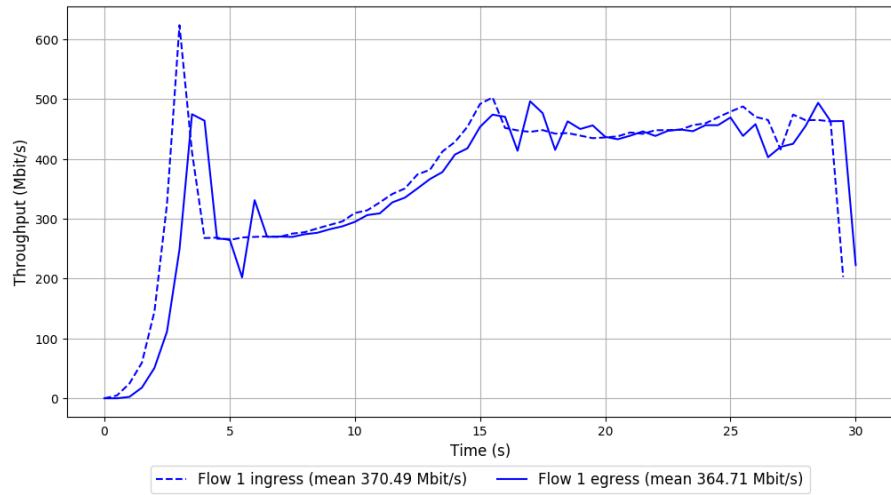


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-10-26 09:34:50
End at: 2018-10-26 09:35:20
Local clock offset: -0.258 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2018-10-26 11:30:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 364.71 Mbit/s
95th percentile per-packet one-way delay: 253.122 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 364.71 Mbit/s
95th percentile per-packet one-way delay: 253.122 ms
Loss rate: 1.92%
```

Run 3: Report of PCC-Allegro — Data Link

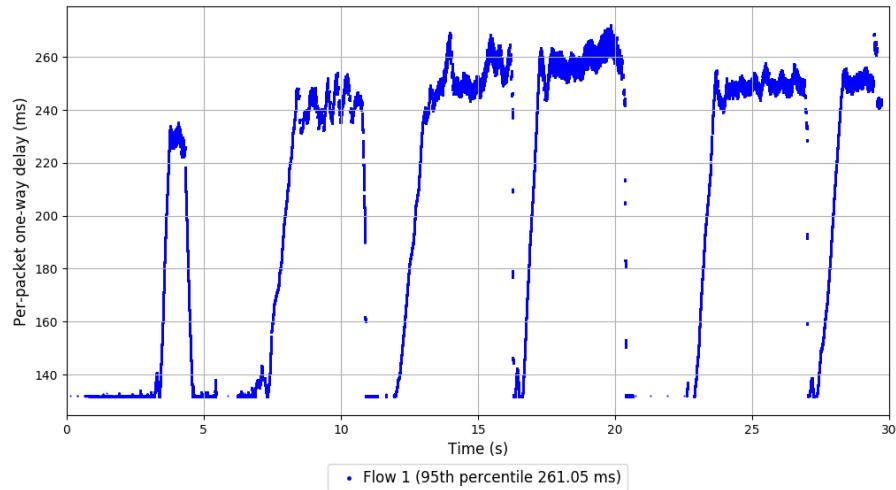
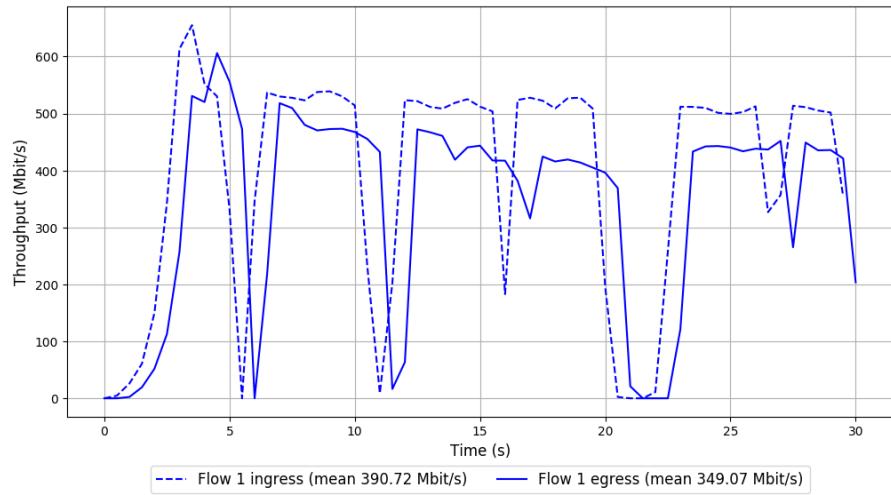


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-10-26 10:00:57
End at: 2018-10-26 10:01:27
Local clock offset: -1.283 ms
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-10-26 11:37:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 349.07 Mbit/s
95th percentile per-packet one-way delay: 261.049 ms
Loss rate: 11.46%
-- Flow 1:
Average throughput: 349.07 Mbit/s
95th percentile per-packet one-way delay: 261.049 ms
Loss rate: 11.46%
```

Run 4: Report of PCC-Allegro — Data Link

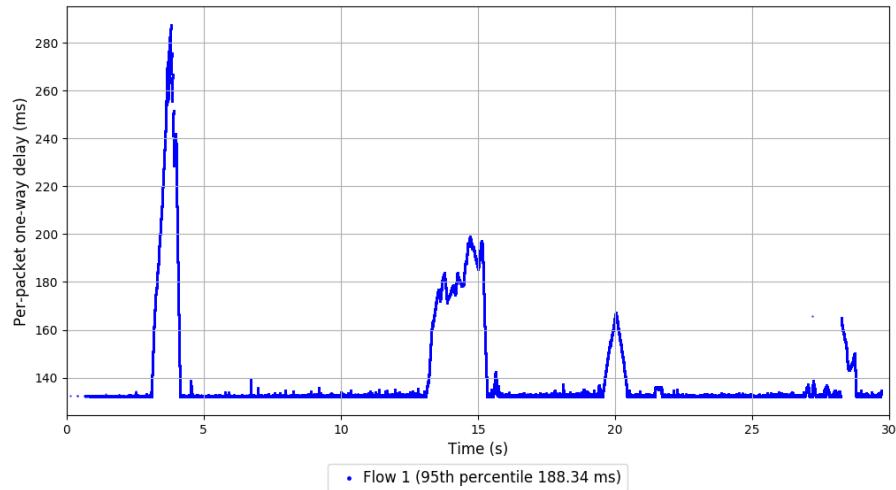
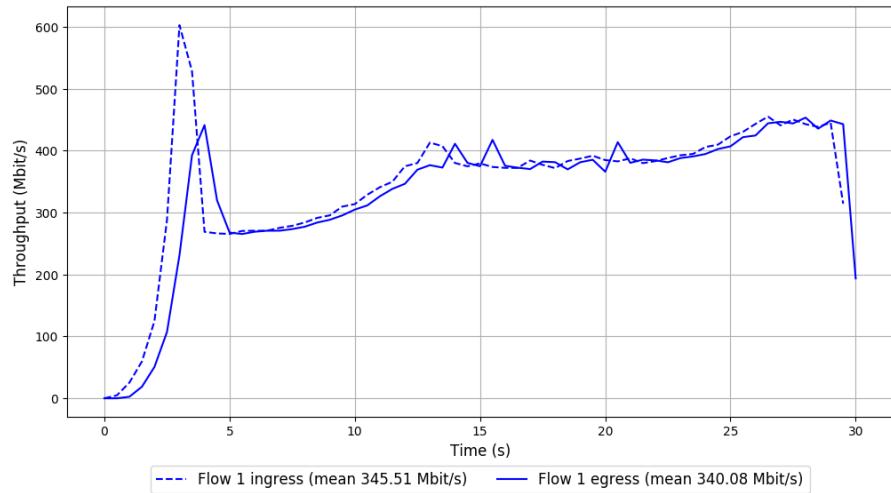


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-10-26 10:26:59
End at: 2018-10-26 10:27:29
Local clock offset: -0.816 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2018-10-26 11:37:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 340.08 Mbit/s
95th percentile per-packet one-way delay: 188.340 ms
Loss rate: 2.45%
-- Flow 1:
Average throughput: 340.08 Mbit/s
95th percentile per-packet one-way delay: 188.340 ms
Loss rate: 2.45%
```

Run 5: Report of PCC-Allegro — Data Link

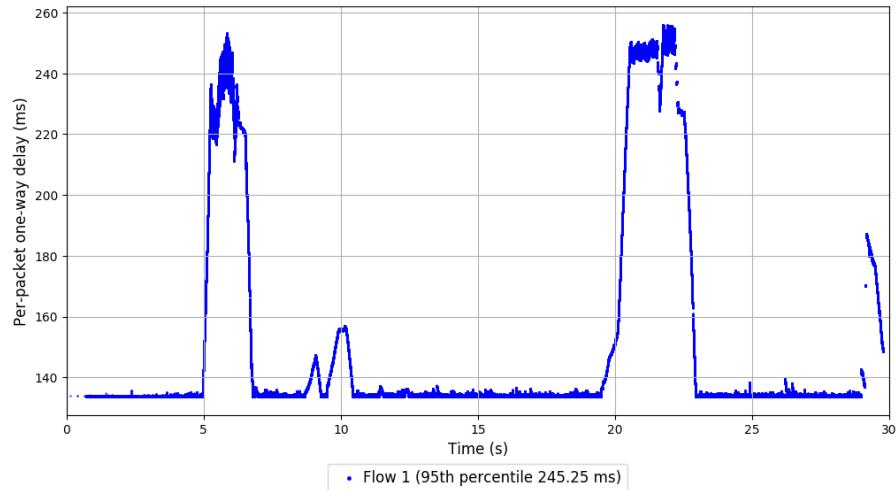
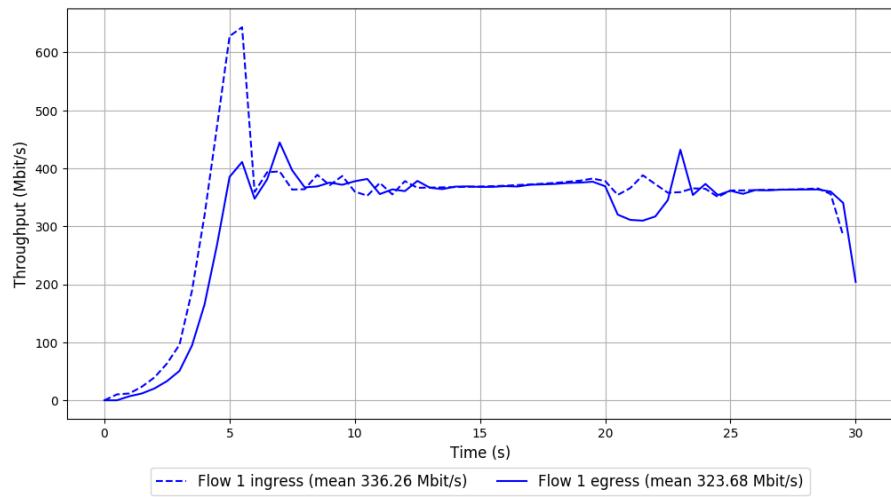


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-10-26 08:30:02
End at: 2018-10-26 08:30:32
Local clock offset: 1.267 ms
Remote clock offset: -0.422 ms

# Below is generated by plot.py at 2018-10-26 11:39:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 323.68 Mbit/s
95th percentile per-packet one-way delay: 245.250 ms
Loss rate: 4.60%
-- Flow 1:
Average throughput: 323.68 Mbit/s
95th percentile per-packet one-way delay: 245.250 ms
Loss rate: 4.60%
```

Run 1: Report of PCC-Expr — Data Link

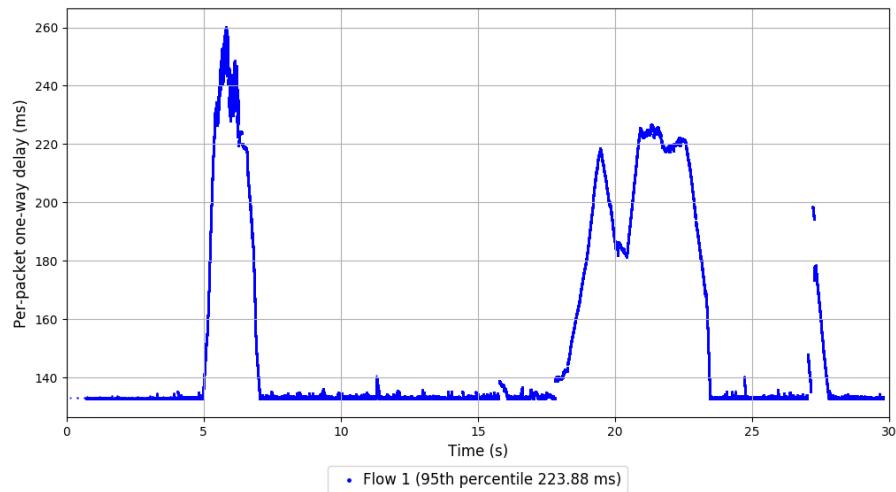
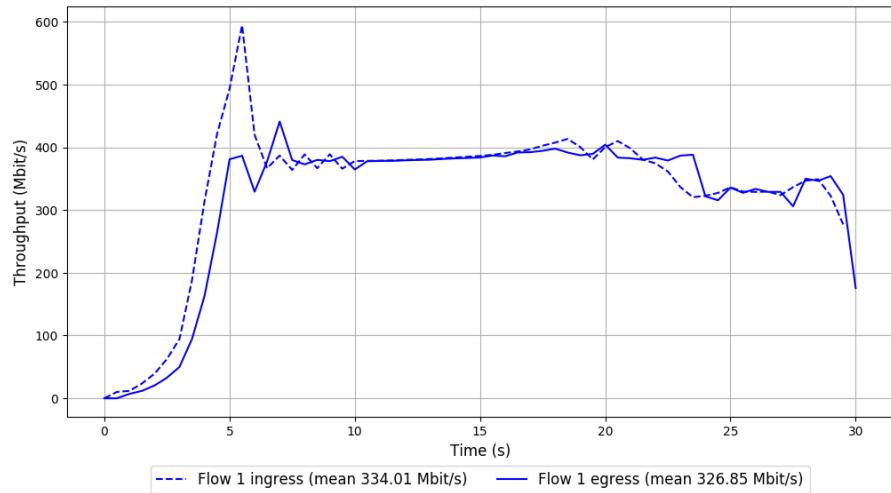


Run 2: Statistics of PCC-Expr

```
Start at: 2018-10-26 08:56:29
End at: 2018-10-26 08:57:00
Local clock offset: -0.516 ms
Remote clock offset: -0.15 ms

# Below is generated by plot.py at 2018-10-26 11:39:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 326.85 Mbit/s
95th percentile per-packet one-way delay: 223.884 ms
Loss rate: 3.02%
-- Flow 1:
Average throughput: 326.85 Mbit/s
95th percentile per-packet one-way delay: 223.884 ms
Loss rate: 3.02%
```

Run 2: Report of PCC-Expr — Data Link

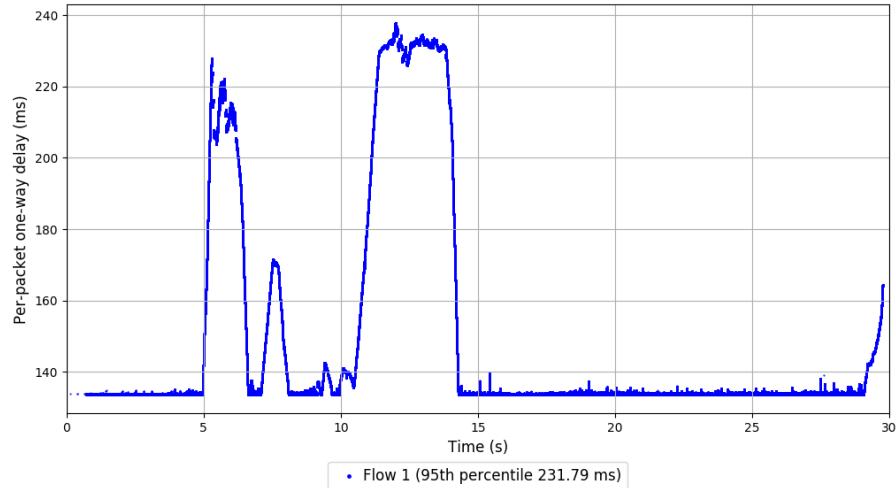
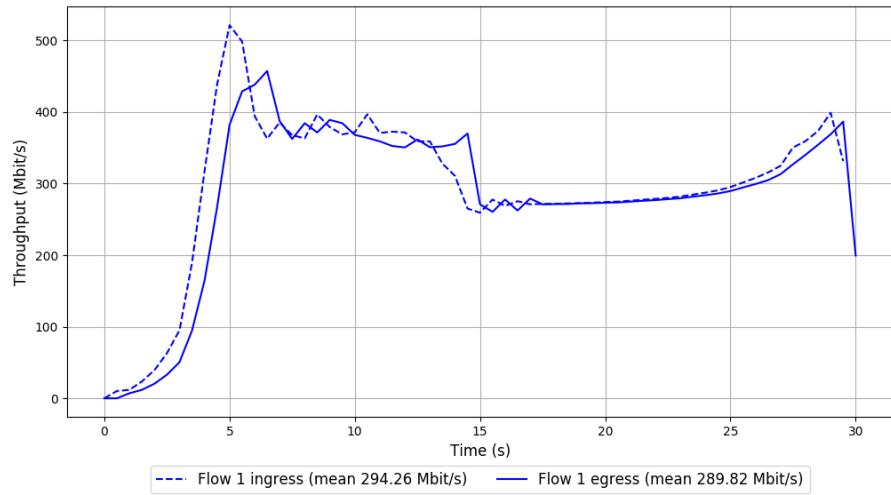


Run 3: Statistics of PCC-Expr

```
Start at: 2018-10-26 09:23:02
End at: 2018-10-26 09:23:32
Local clock offset: 0.902 ms
Remote clock offset: -0.409 ms

# Below is generated by plot.py at 2018-10-26 11:39:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 289.82 Mbit/s
95th percentile per-packet one-way delay: 231.795 ms
Loss rate: 2.39%
-- Flow 1:
Average throughput: 289.82 Mbit/s
95th percentile per-packet one-way delay: 231.795 ms
Loss rate: 2.39%
```

Run 3: Report of PCC-Expr — Data Link

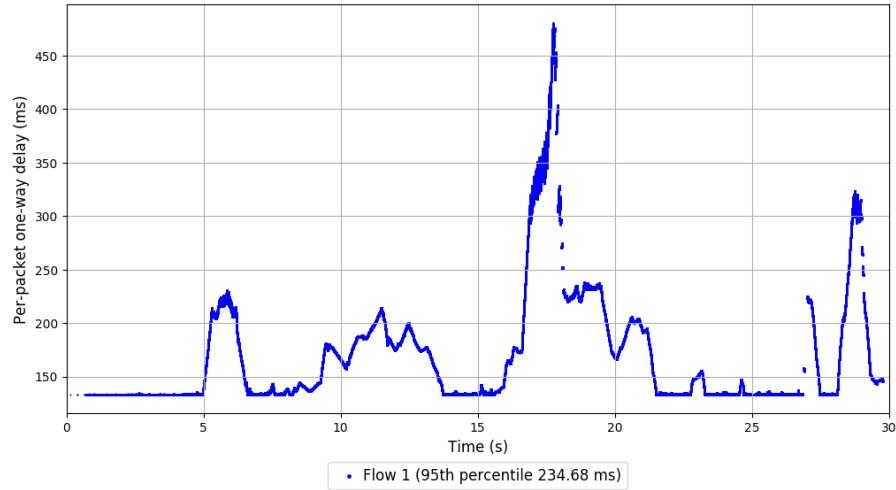
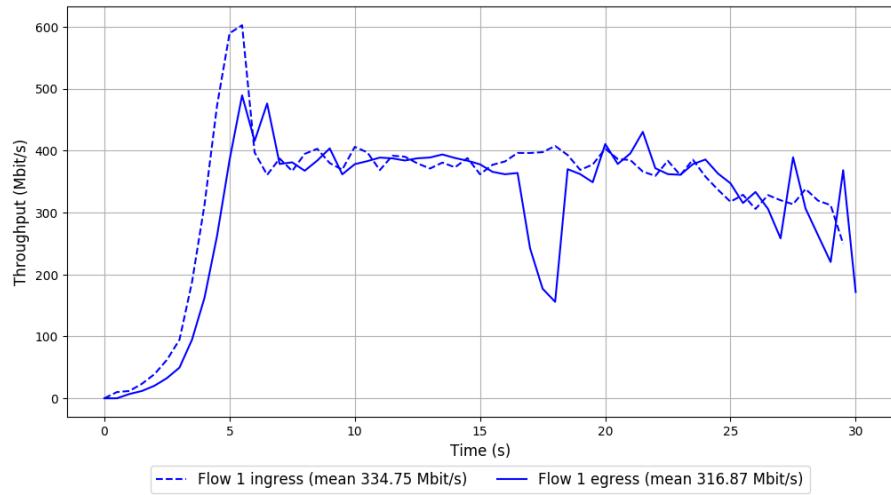


Run 4: Statistics of PCC-Expr

```
Start at: 2018-10-26 09:49:39
End at: 2018-10-26 09:50:09
Local clock offset: -0.133 ms
Remote clock offset: -0.072 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 316.87 Mbit/s
95th percentile per-packet one-way delay: 234.676 ms
Loss rate: 6.19%
-- Flow 1:
Average throughput: 316.87 Mbit/s
95th percentile per-packet one-way delay: 234.676 ms
Loss rate: 6.19%
```

Run 4: Report of PCC-Expr — Data Link

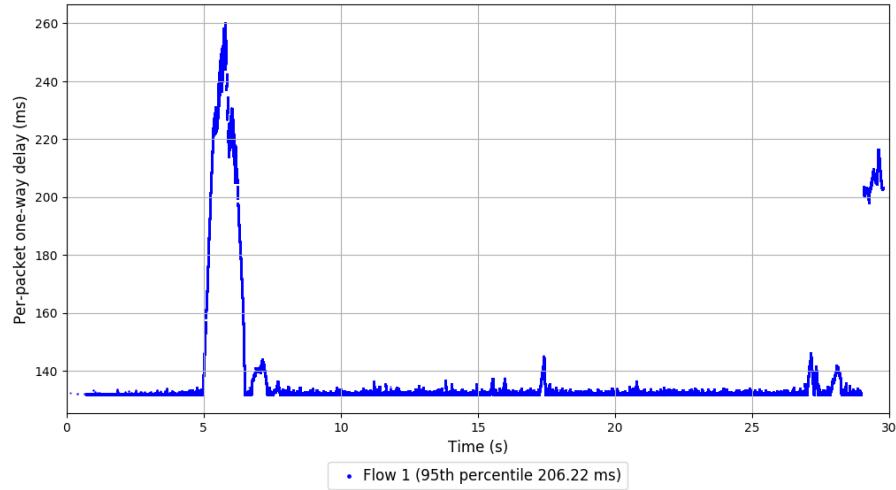
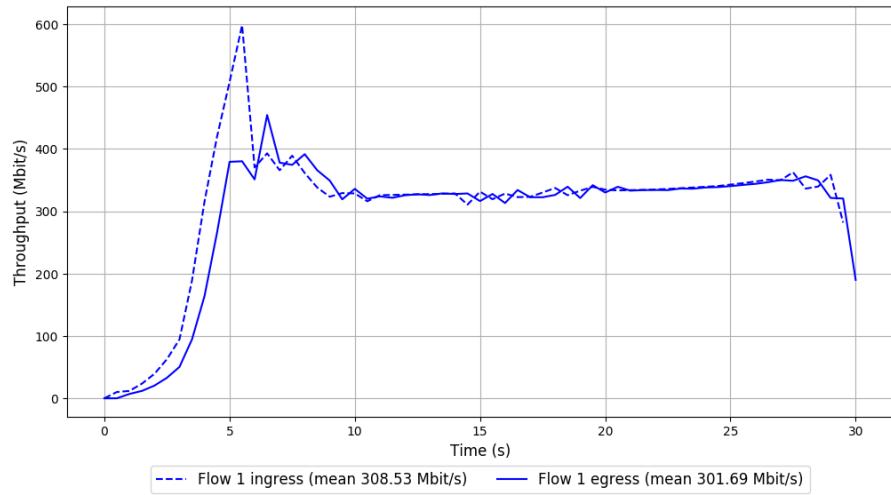


Run 5: Statistics of PCC-Expr

```
Start at: 2018-10-26 10:15:23
End at: 2018-10-26 10:15:53
Local clock offset: -0.652 ms
Remote clock offset: 0.301 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 301.69 Mbit/s
95th percentile per-packet one-way delay: 206.222 ms
Loss rate: 3.09%
-- Flow 1:
Average throughput: 301.69 Mbit/s
95th percentile per-packet one-way delay: 206.222 ms
Loss rate: 3.09%
```

Run 5: Report of PCC-Expr — Data Link

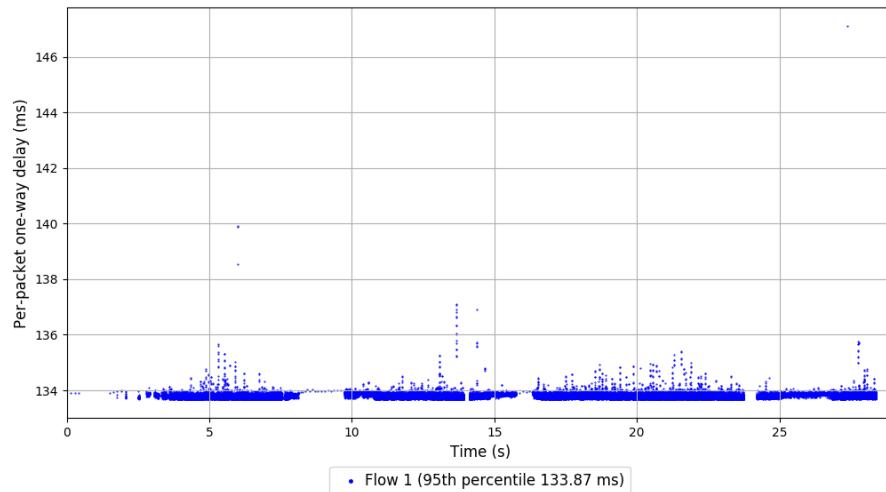
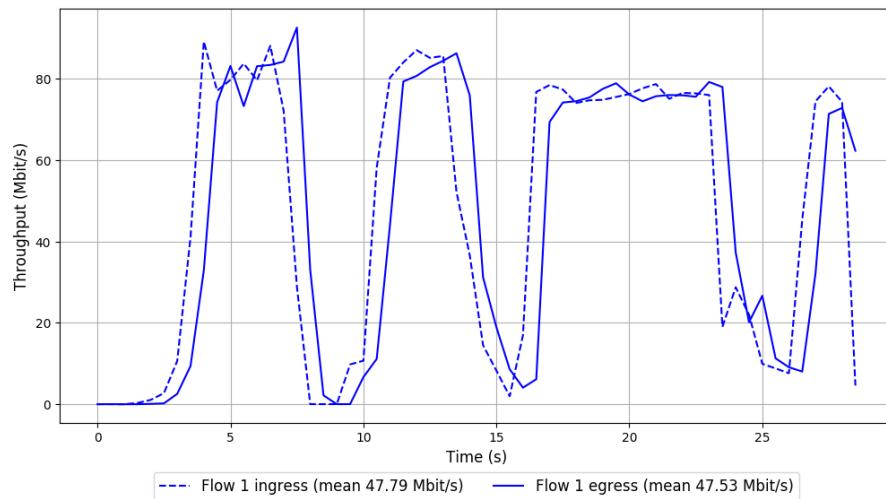


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-10-26 08:27:10
End at: 2018-10-26 08:27:40
Local clock offset: 0.697 ms
Remote clock offset: -0.105 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.53 Mbit/s
95th percentile per-packet one-way delay: 133.865 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 47.53 Mbit/s
95th percentile per-packet one-way delay: 133.865 ms
Loss rate: 1.47%
```

Run 1: Report of QUIC Cubic — Data Link

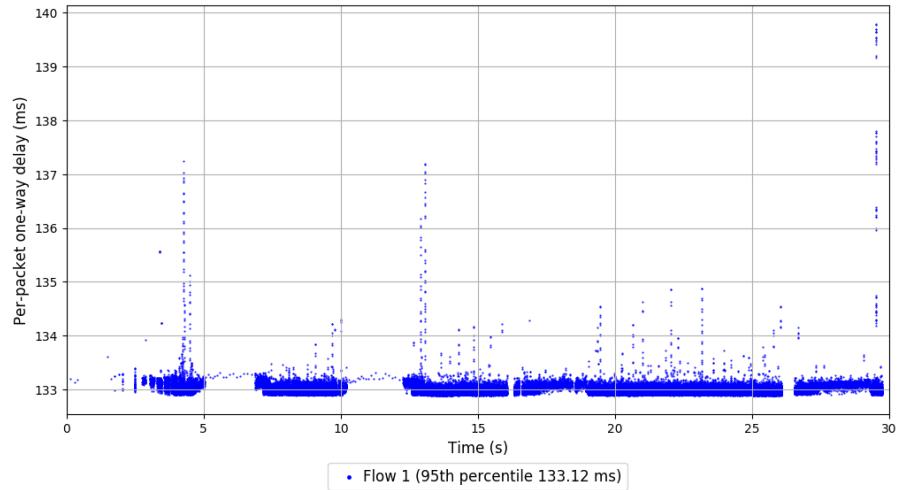
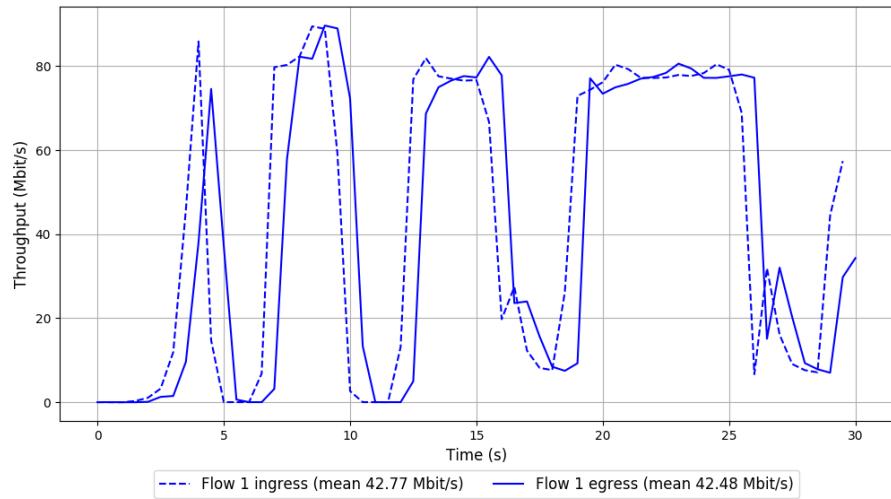


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-10-26 08:53:52
End at: 2018-10-26 08:54:22
Local clock offset: -0.027 ms
Remote clock offset: -0.21 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.48 Mbit/s
95th percentile per-packet one-way delay: 133.115 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 42.48 Mbit/s
95th percentile per-packet one-way delay: 133.115 ms
Loss rate: 1.56%
```

Run 2: Report of QUIC Cubic — Data Link

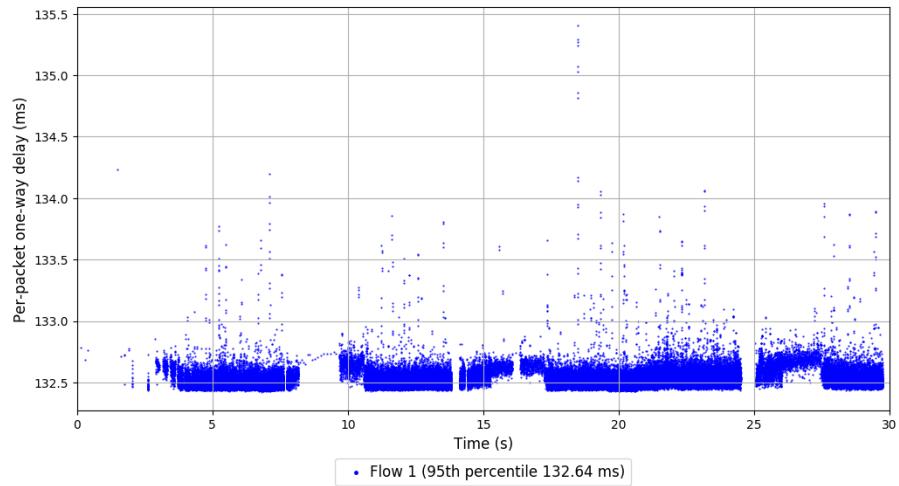
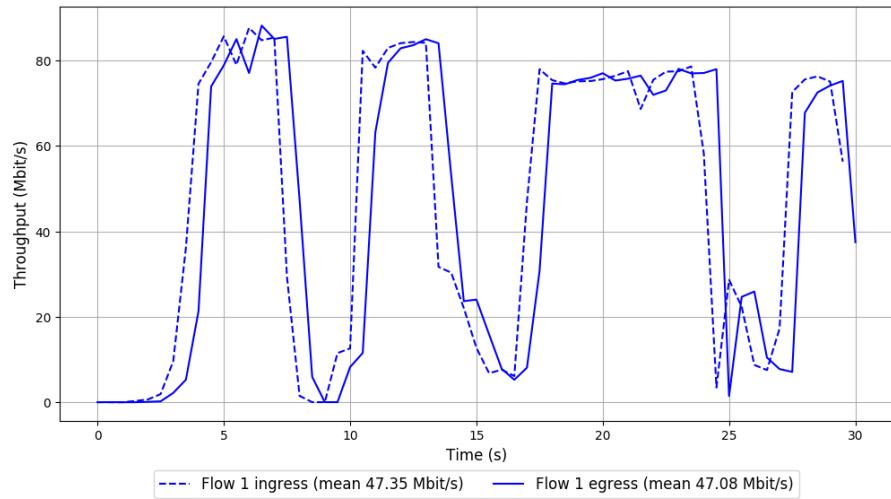


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-10-26 09:20:23
End at: 2018-10-26 09:20:53
Local clock offset: -0.448 ms
Remote clock offset: -0.087 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.08 Mbit/s
95th percentile per-packet one-way delay: 132.640 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 47.08 Mbit/s
95th percentile per-packet one-way delay: 132.640 ms
Loss rate: 1.45%
```

Run 3: Report of QUIC Cubic — Data Link

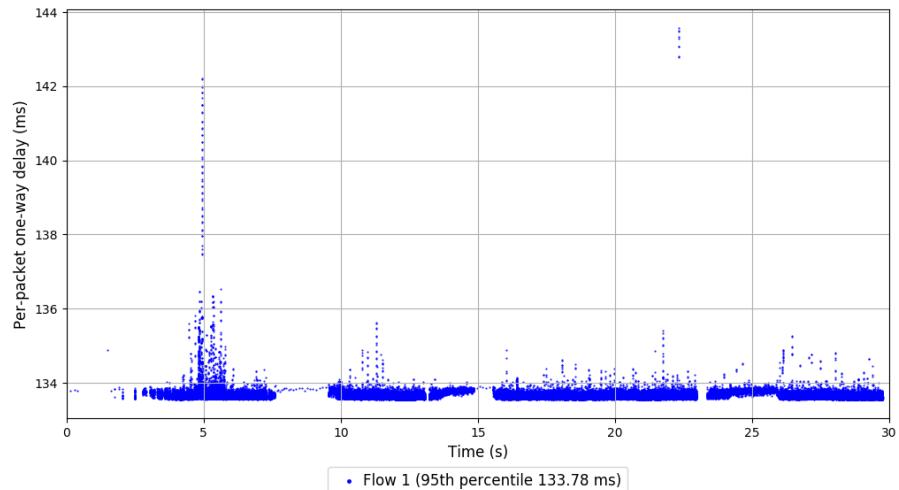
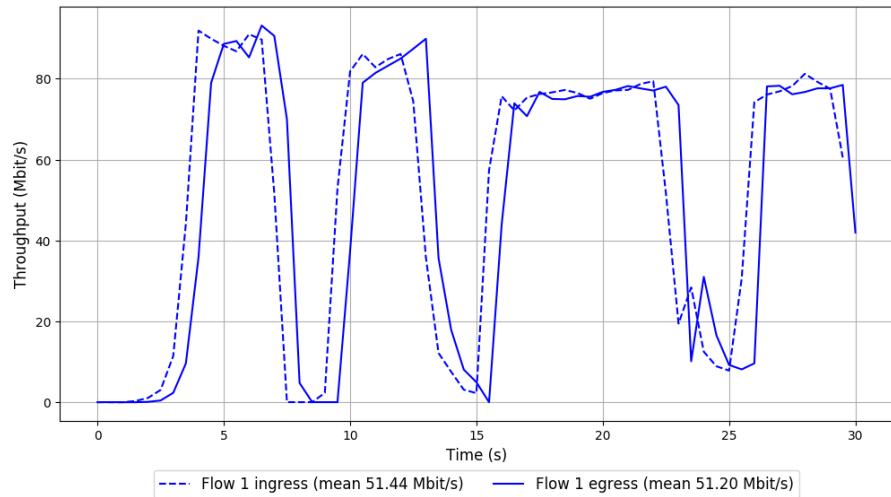


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-10-26 09:46:56
End at: 2018-10-26 09:47:26
Local clock offset: 0.36 ms
Remote clock offset: -0.386 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.20 Mbit/s
95th percentile per-packet one-way delay: 133.780 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 51.20 Mbit/s
95th percentile per-packet one-way delay: 133.780 ms
Loss rate: 1.36%
```

Run 4: Report of QUIC Cubic — Data Link

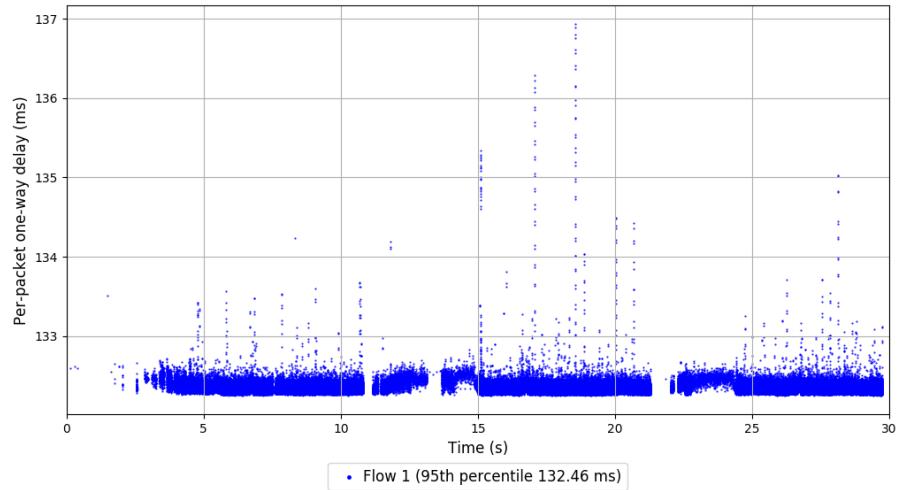
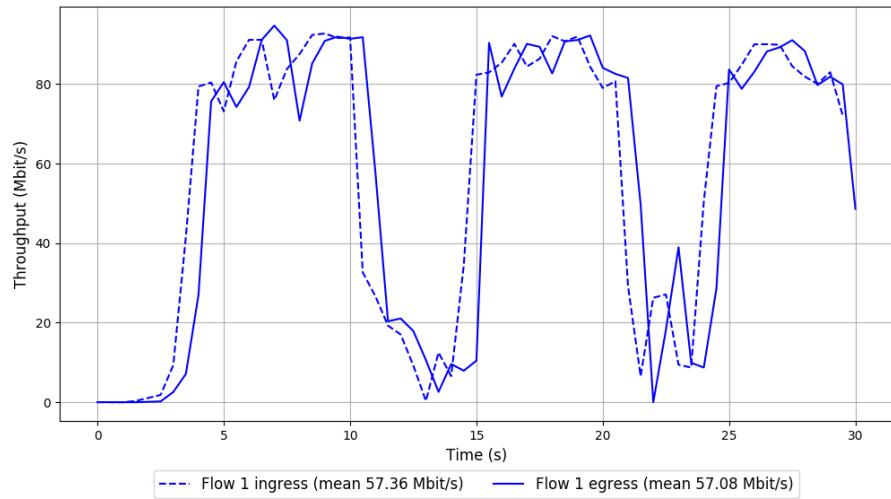


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-10-26 10:12:44
End at: 2018-10-26 10:13:14
Local clock offset: -0.24 ms
Remote clock offset: 0.256 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.08 Mbit/s
95th percentile per-packet one-way delay: 132.457 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 57.08 Mbit/s
95th percentile per-packet one-way delay: 132.457 ms
Loss rate: 1.39%
```

Run 5: Report of QUIC Cubic — Data Link

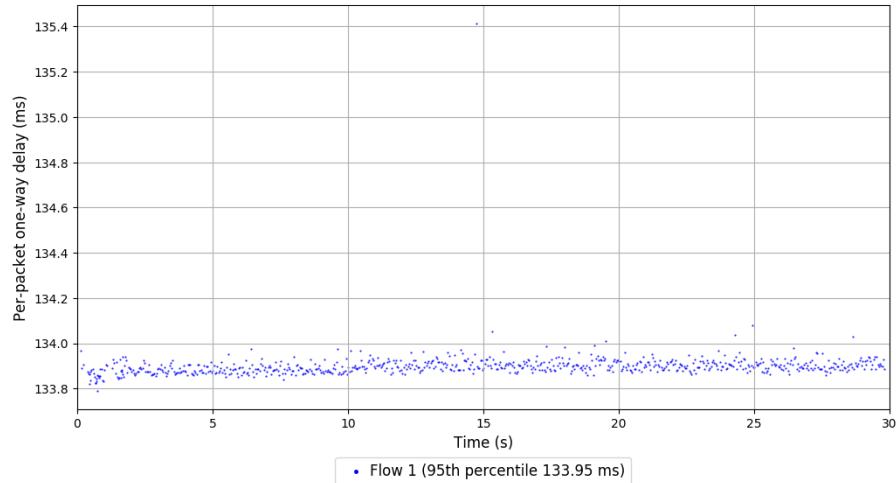
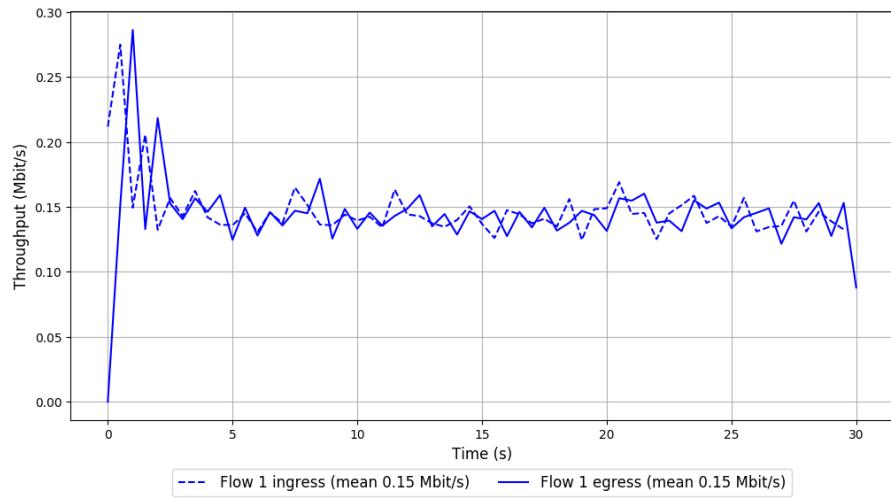


```
Run 1: Statistics of SCReAM
```

```
Start at: 2018-10-26 08:46:41
End at: 2018-10-26 08:47:11
Local clock offset: 0.87 ms
Remote clock offset: -0.506 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.946 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.946 ms
Loss rate: 0.88%
```

Run 1: Report of SCReAM — Data Link

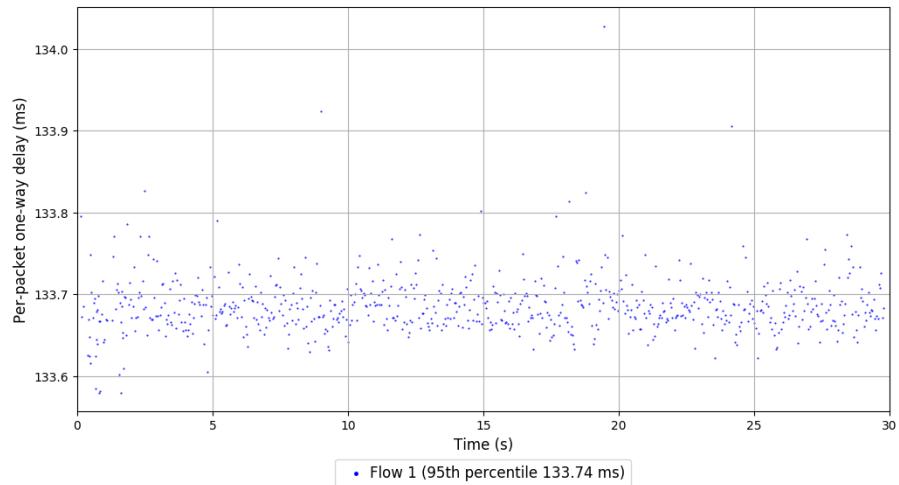
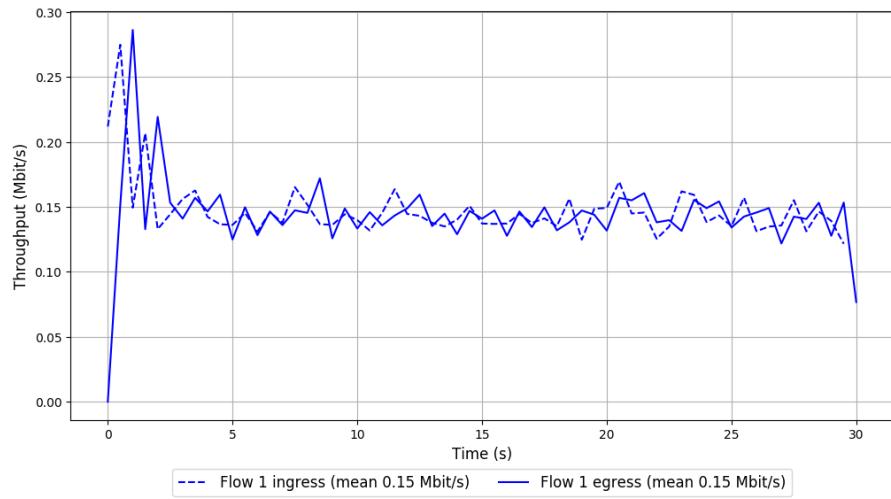


Run 2: Statistics of SCReAM

```
Start at: 2018-10-26 09:13:16
End at: 2018-10-26 09:13:46
Local clock offset: 0.298 ms
Remote clock offset: -0.166 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.743 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.743 ms
Loss rate: 0.88%
```

Run 2: Report of SCReAM — Data Link

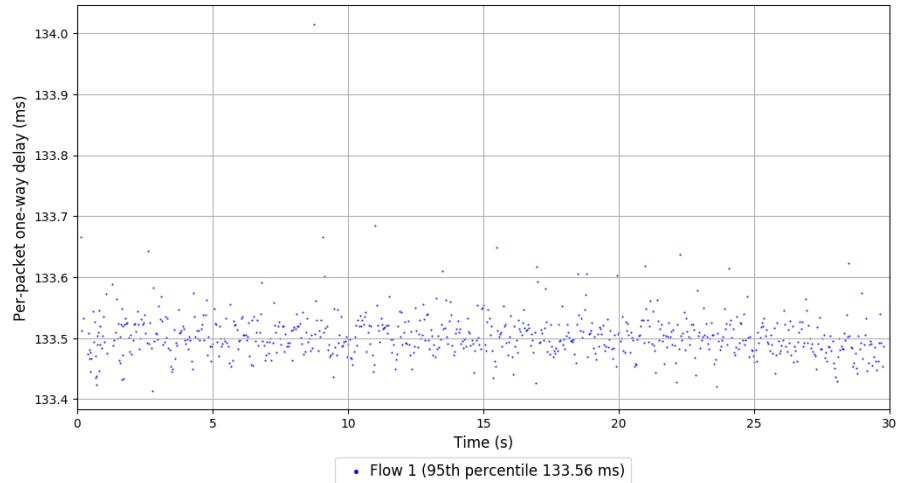
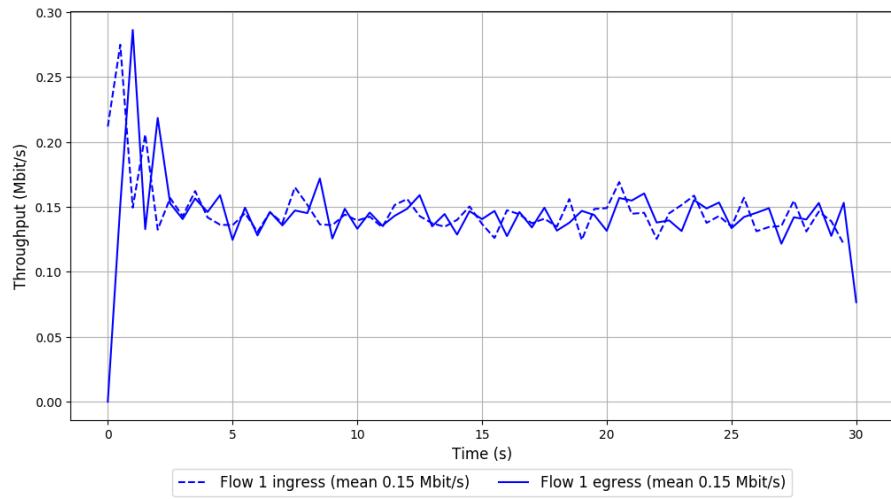


Run 3: Statistics of SCReAM

```
Start at: 2018-10-26 09:39:34
End at: 2018-10-26 09:40:04
Local clock offset: 0.813 ms
Remote clock offset: -0.412 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.560 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.560 ms
Loss rate: 0.88%
```

Run 3: Report of SCReAM — Data Link

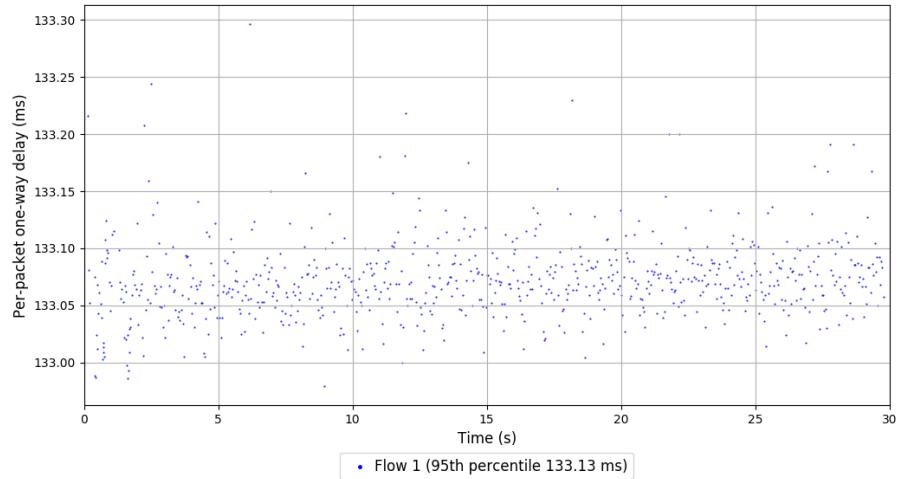
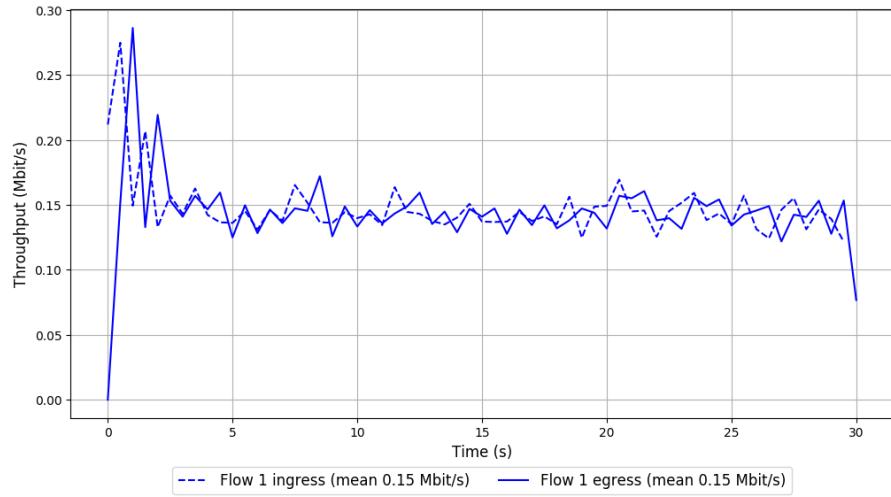


Run 4: Statistics of SCReAM

```
Start at: 2018-10-26 10:05:43
End at: 2018-10-26 10:06:13
Local clock offset: -0.097 ms
Remote clock offset: -0.115 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.129 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.129 ms
Loss rate: 0.88%
```

Run 4: Report of SCReAM — Data Link

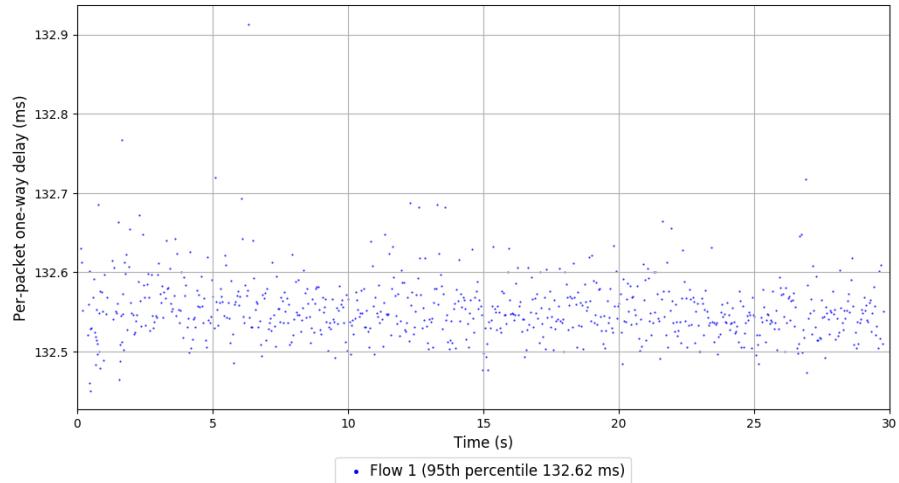
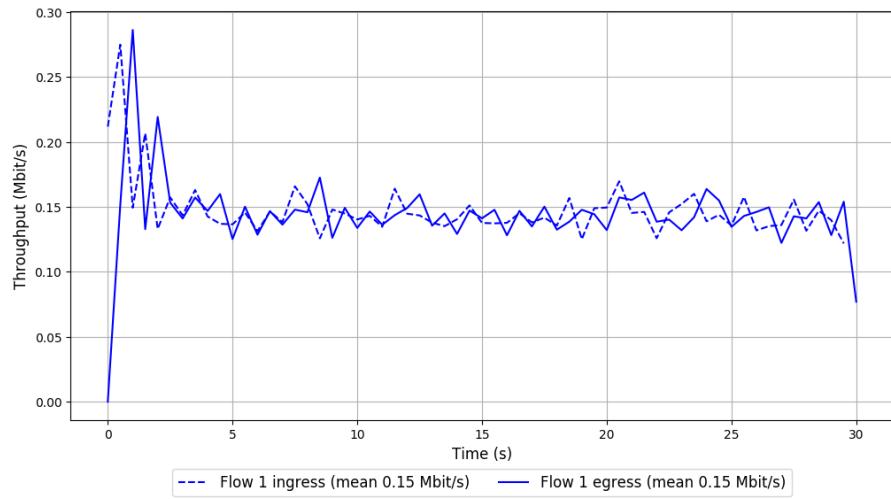


Run 5: Statistics of SCReAM

```
Start at: 2018-10-26 10:31:29
End at: 2018-10-26 10:31:59
Local clock offset: -0.645 ms
Remote clock offset: -0.103 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.623 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.623 ms
Loss rate: 0.88%
```

Run 5: Report of SCReAM — Data Link

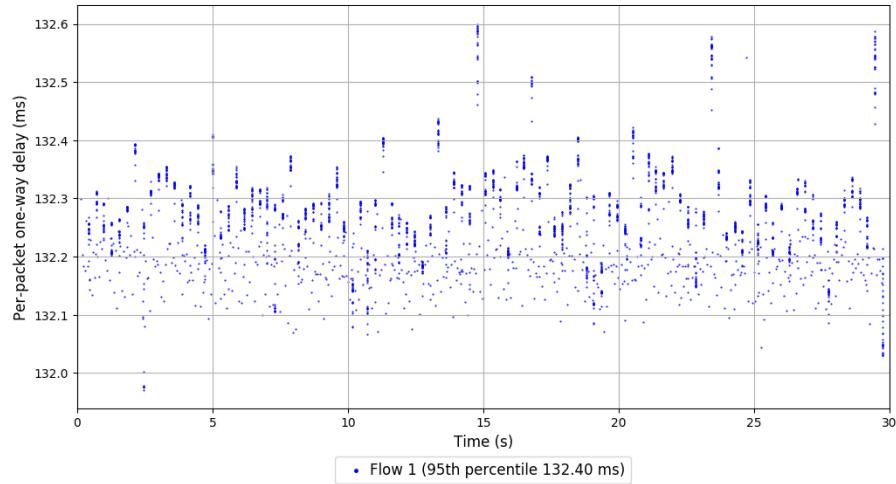
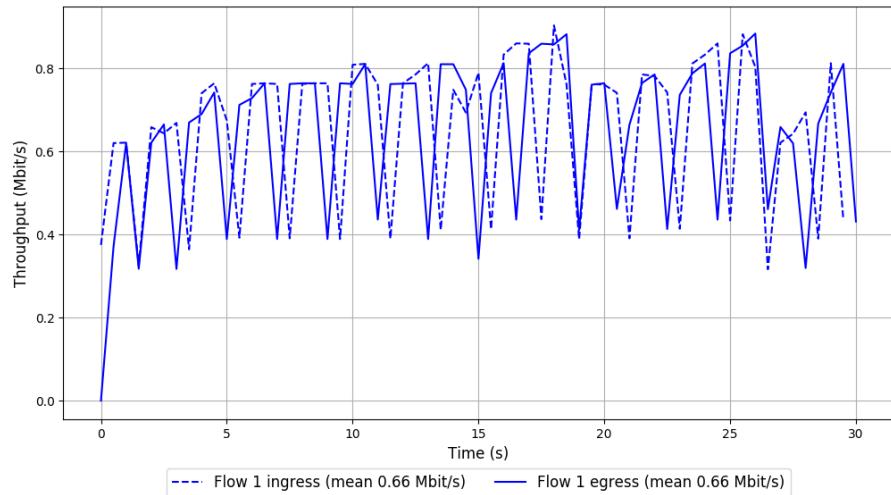


Run 1: Statistics of Sprout

```
Start at: 2018-10-26 08:51:04
End at: 2018-10-26 08:51:34
Local clock offset: -0.98 ms
Remote clock offset: -0.149 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 132.398 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 132.398 ms
Loss rate: 0.02%
```

Run 1: Report of Sprout — Data Link

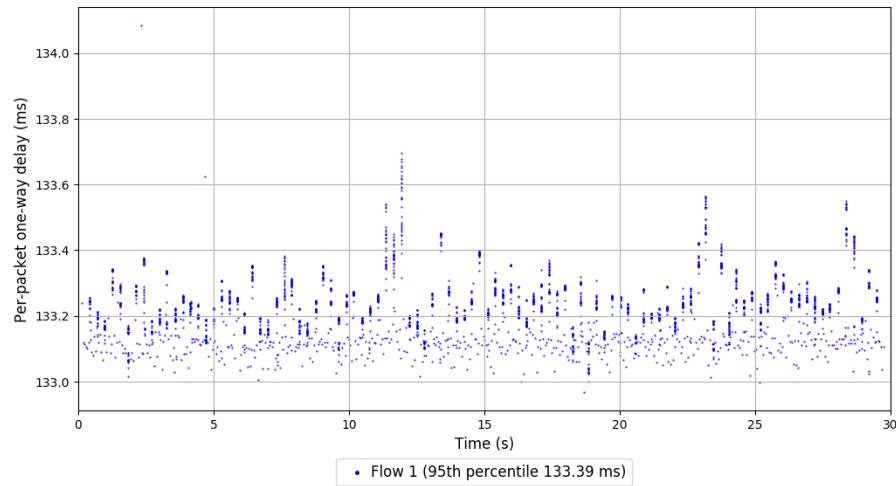
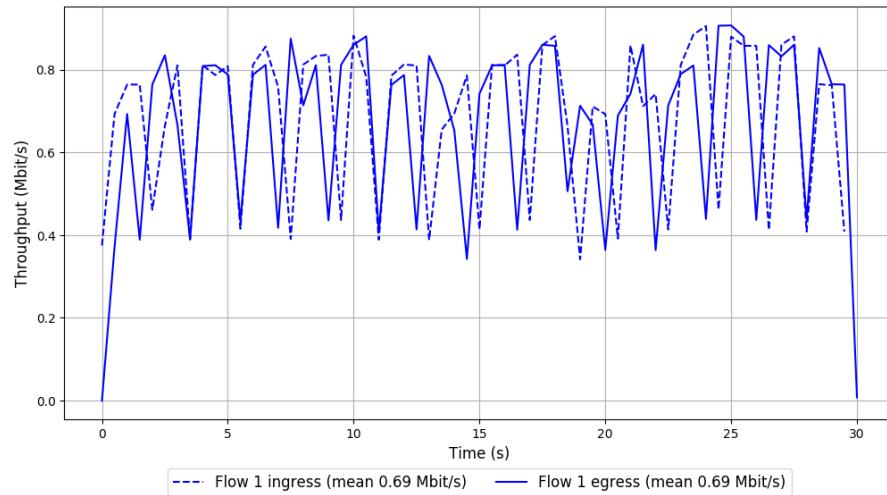


Run 2: Statistics of Sprout

```
Start at: 2018-10-26 09:17:38
End at: 2018-10-26 09:18:08
Local clock offset: -0.037 ms
Remote clock offset: -0.176 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 133.392 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 133.392 ms
Loss rate: 0.98%
```

Run 2: Report of Sprout — Data Link

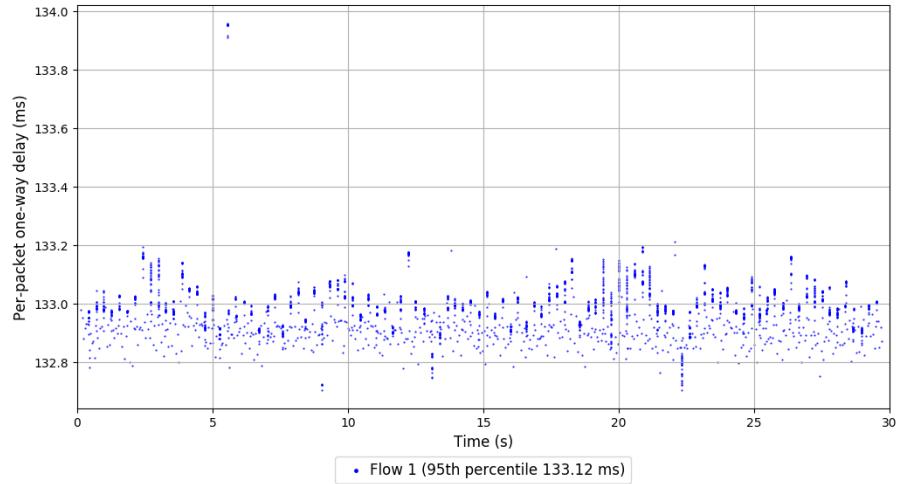
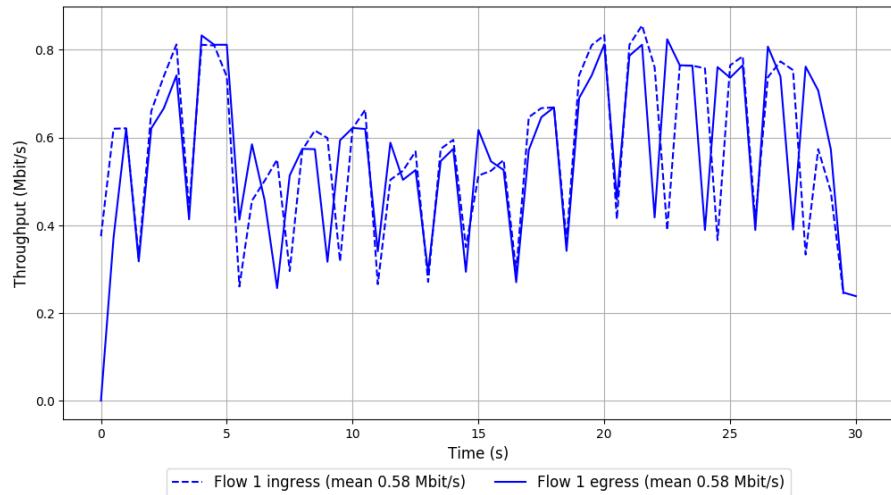


Run 3: Statistics of Sprout

```
Start at: 2018-10-26 09:44:02
End at: 2018-10-26 09:44:32
Local clock offset: -0.602 ms
Remote clock offset: -0.367 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 133.123 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 133.123 ms
Loss rate: 0.70%
```

Run 3: Report of Sprout — Data Link

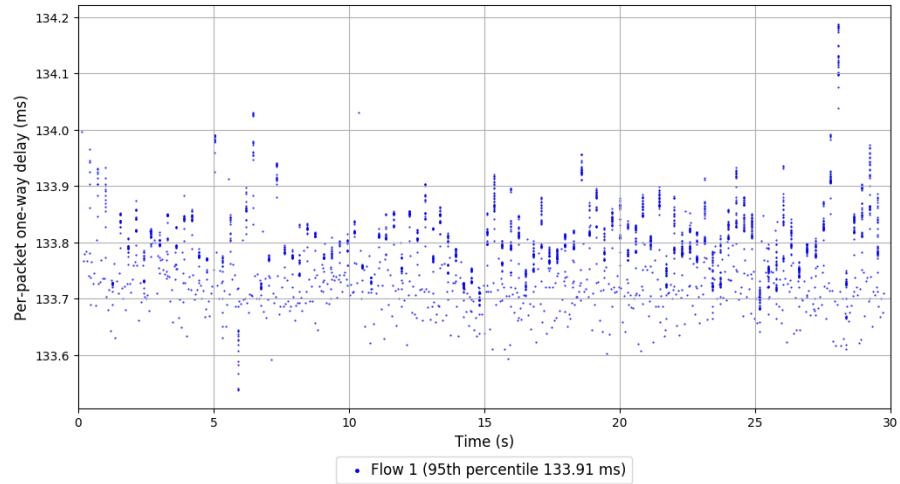
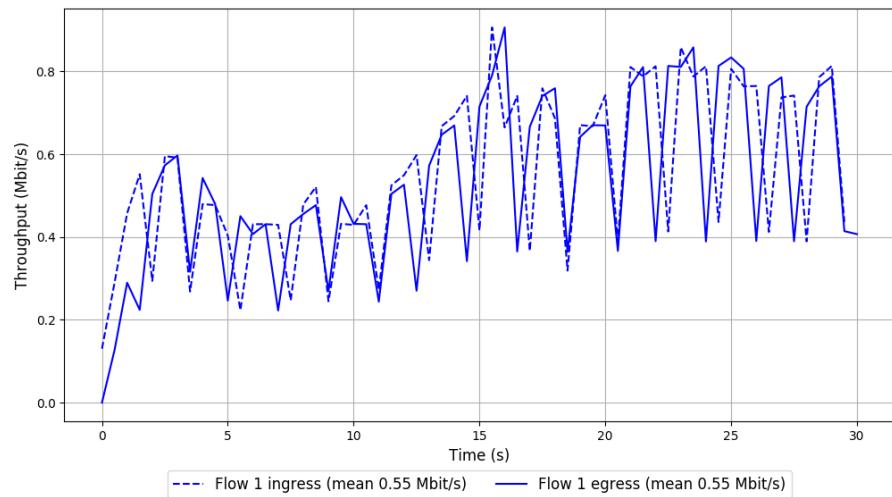


Run 4: Statistics of Sprout

```
Start at: 2018-10-26 10:10:01
End at: 2018-10-26 10:10:31
Local clock offset: 0.58 ms
Remote clock offset: -0.13 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 133.914 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 133.914 ms
Loss rate: 1.31%
```

Run 4: Report of Sprout — Data Link

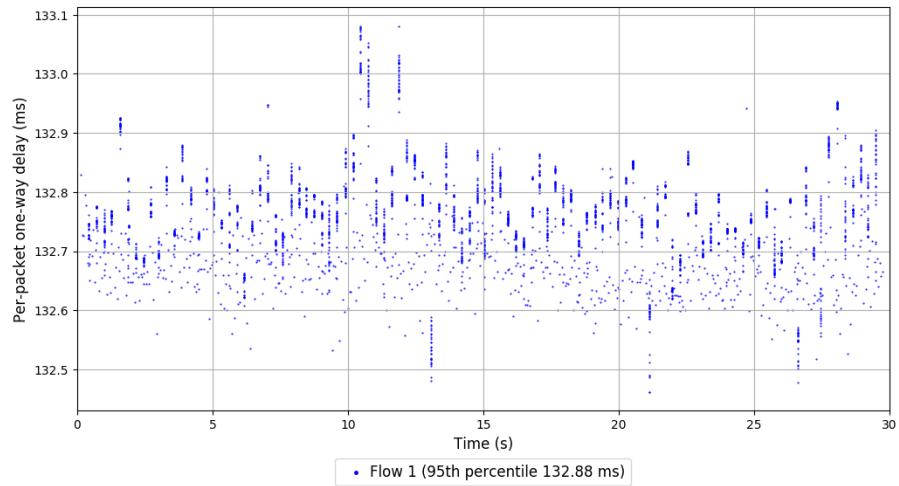
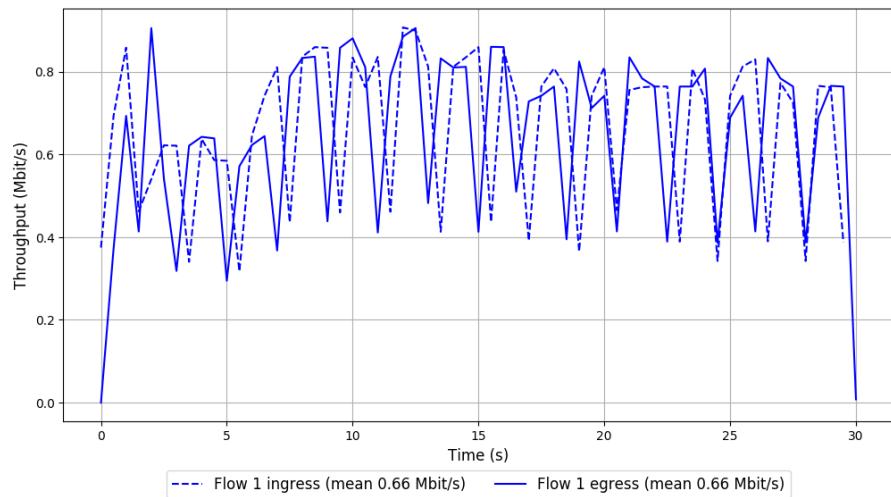


Run 5: Statistics of Sprout

```
Start at: 2018-10-26 10:35:53
End at: 2018-10-26 10:36:23
Local clock offset: -0.123 ms
Remote clock offset: 0.222 ms

# Below is generated by plot.py at 2018-10-26 11:41:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 132.884 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 132.884 ms
Loss rate: 0.96%
```

Run 5: Report of Sprout — Data Link

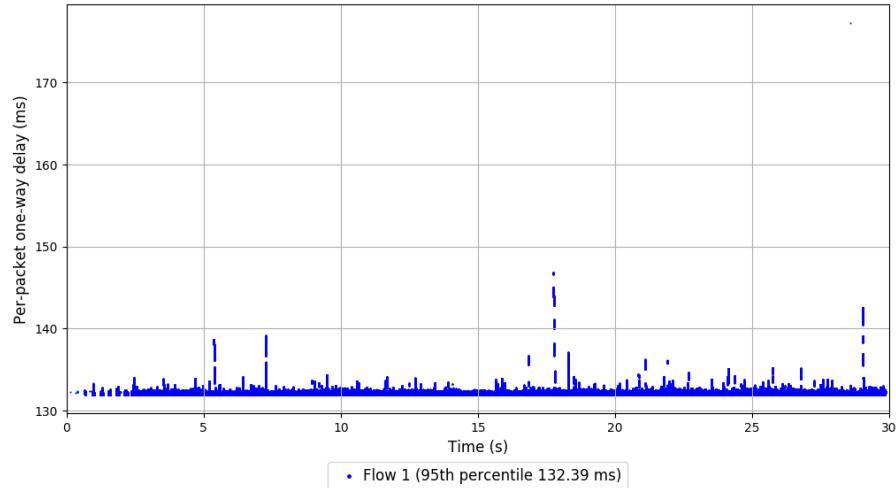
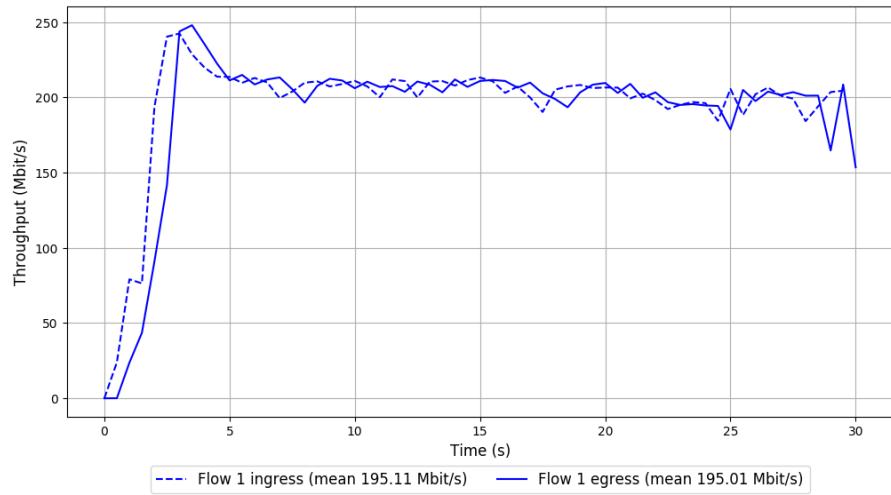


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-10-26 08:31:46
End at: 2018-10-26 08:32:16
Local clock offset: -0.889 ms
Remote clock offset: -0.074 ms

# Below is generated by plot.py at 2018-10-26 11:44:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 195.01 Mbit/s
95th percentile per-packet one-way delay: 132.388 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 195.01 Mbit/s
95th percentile per-packet one-way delay: 132.388 ms
Loss rate: 0.93%
```

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

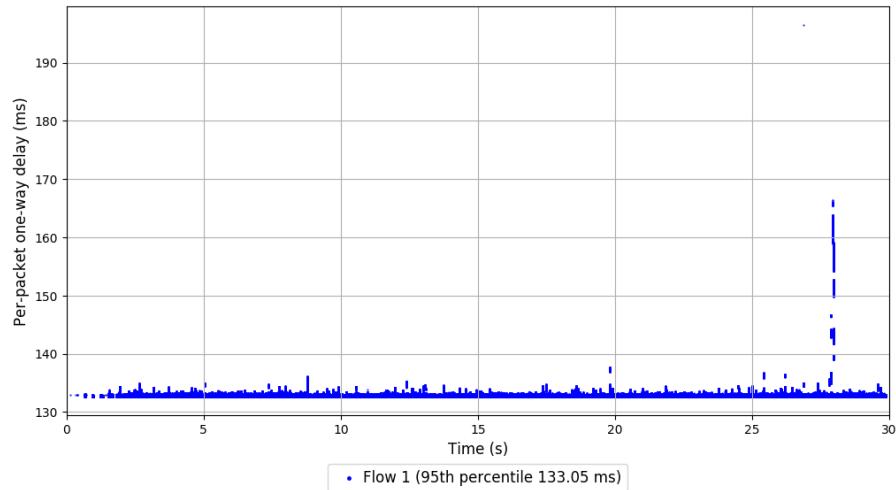
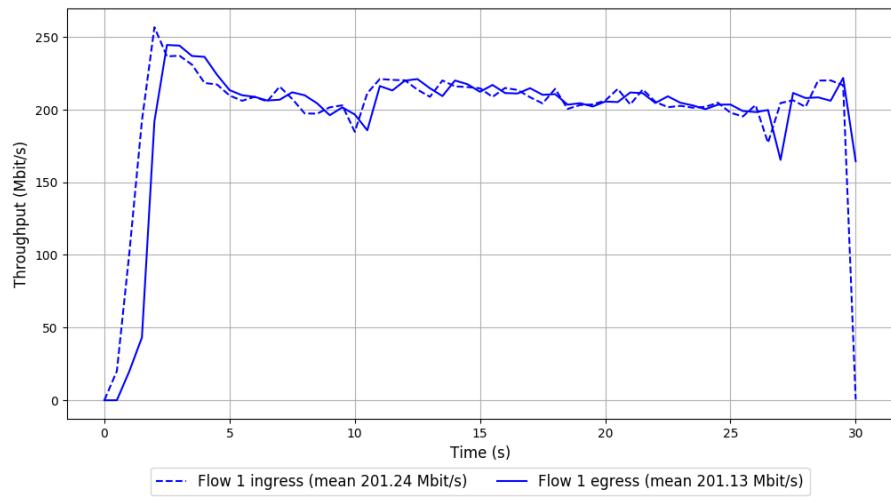


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-10-26 08:58:13
End at: 2018-10-26 08:58:43
Local clock offset: -0.133 ms
Remote clock offset: -0.146 ms

# Below is generated by plot.py at 2018-10-26 11:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 201.13 Mbit/s
95th percentile per-packet one-way delay: 133.047 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 201.13 Mbit/s
95th percentile per-packet one-way delay: 133.047 ms
Loss rate: 0.95%
```

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

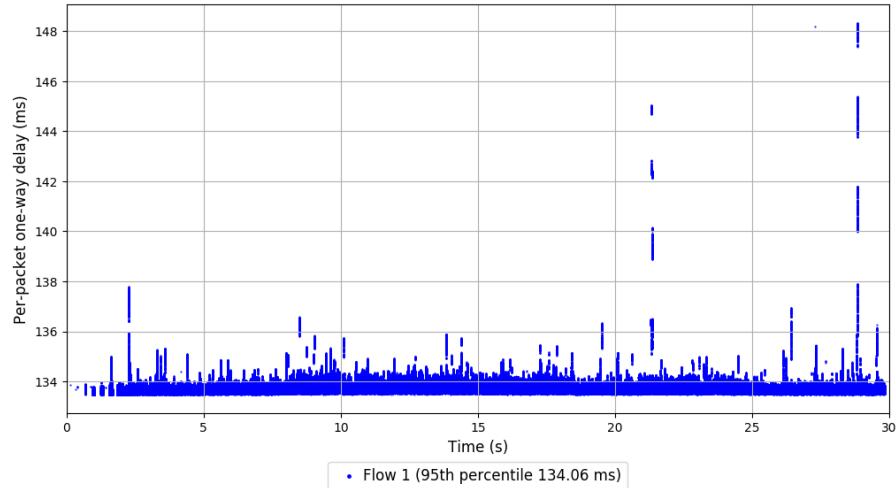
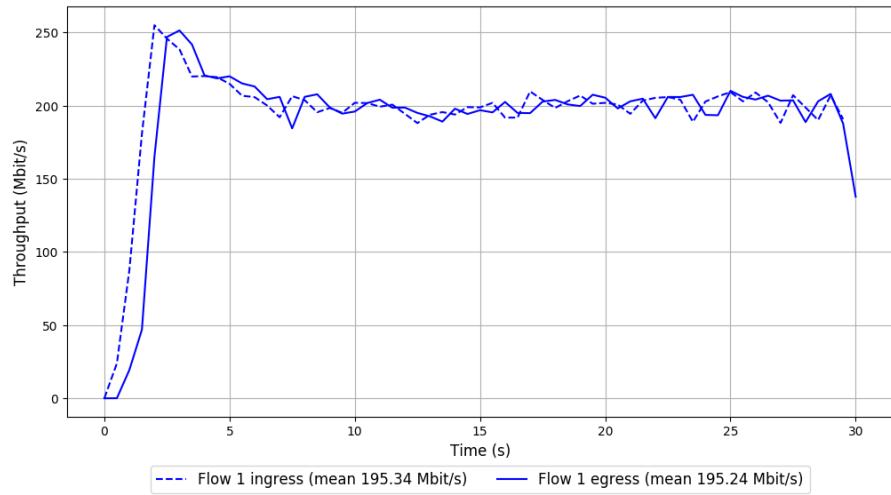


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-10-26 09:24:46
End at: 2018-10-26 09:25:16
Local clock offset: 0.38 ms
Remote clock offset: -0.426 ms

# Below is generated by plot.py at 2018-10-26 11:45:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 195.24 Mbit/s
95th percentile per-packet one-way delay: 134.060 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 195.24 Mbit/s
95th percentile per-packet one-way delay: 134.060 ms
Loss rate: 0.93%
```

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

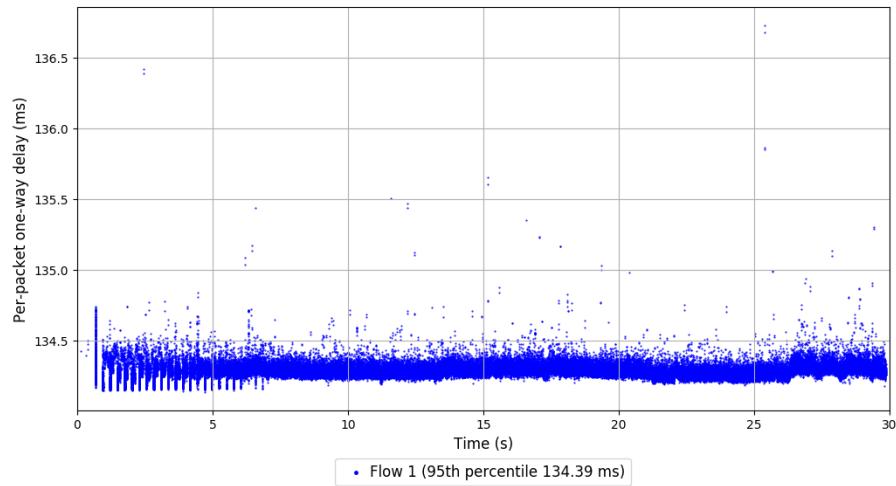
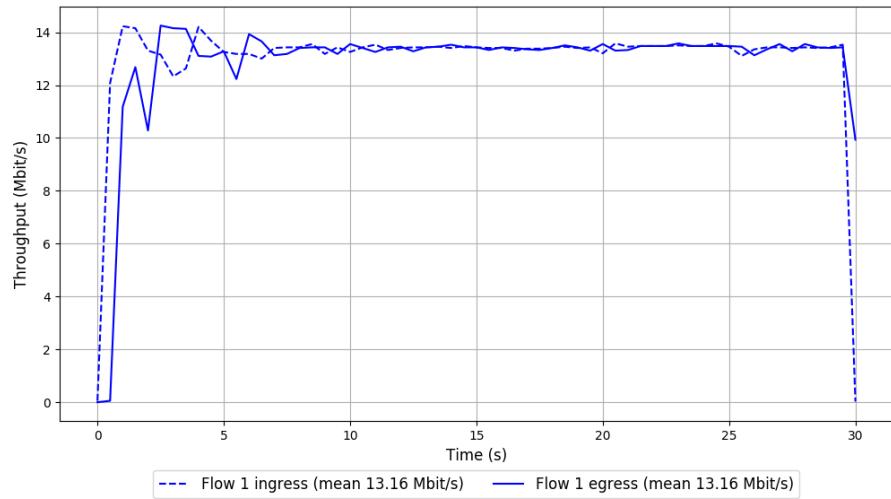


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-10-26 09:51:23
End at: 2018-10-26 09:51:53
Local clock offset: 0.924 ms
Remote clock offset: -0.428 ms

# Below is generated by plot.py at 2018-10-26 11:45:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.16 Mbit/s
95th percentile per-packet one-way delay: 134.388 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 13.16 Mbit/s
95th percentile per-packet one-way delay: 134.388 ms
Loss rate: 0.91%
```

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

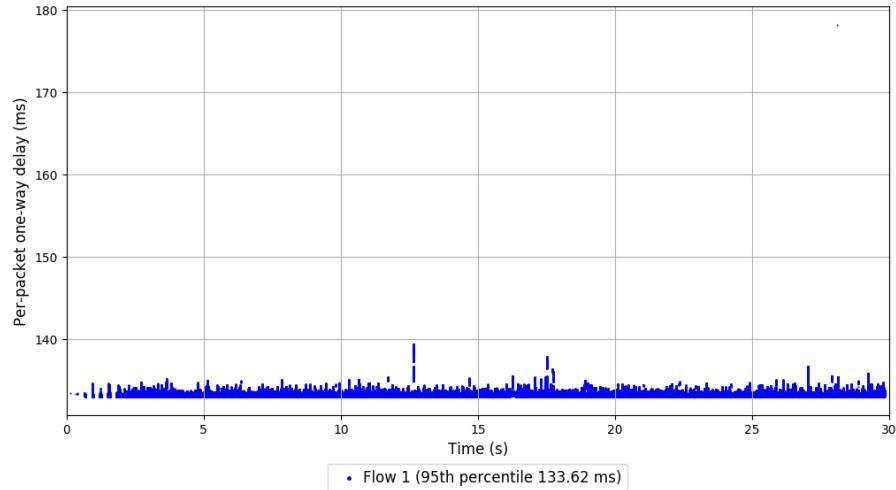
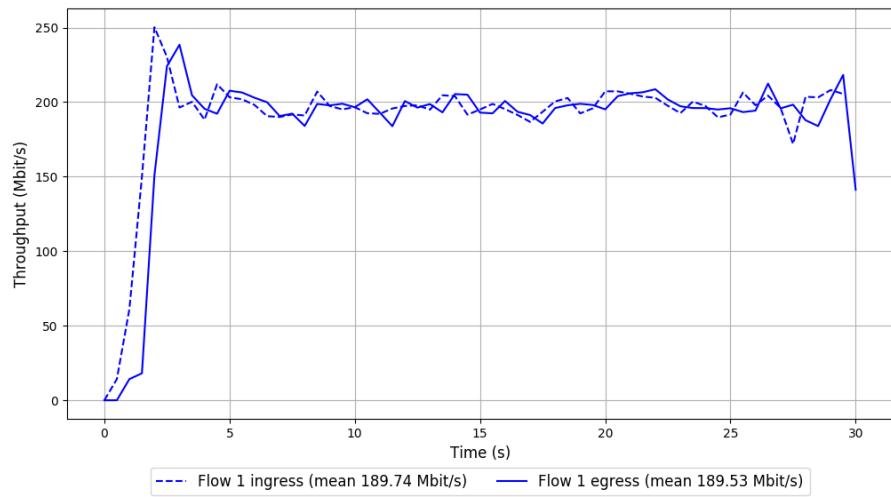


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-10-26 10:17:05
End at: 2018-10-26 10:17:35
Local clock offset: 0.127 ms
Remote clock offset: -0.102 ms

# Below is generated by plot.py at 2018-10-26 11:46:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 189.53 Mbit/s
95th percentile per-packet one-way delay: 133.618 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 189.53 Mbit/s
95th percentile per-packet one-way delay: 133.618 ms
Loss rate: 0.99%
```

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

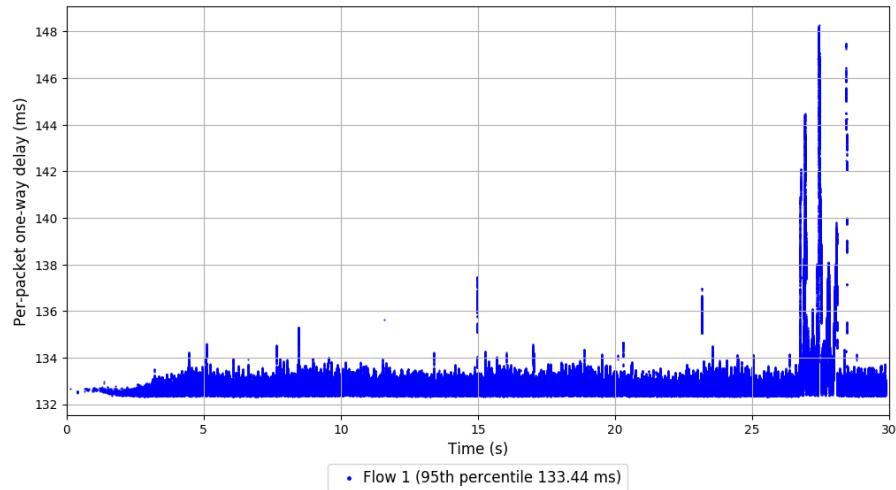
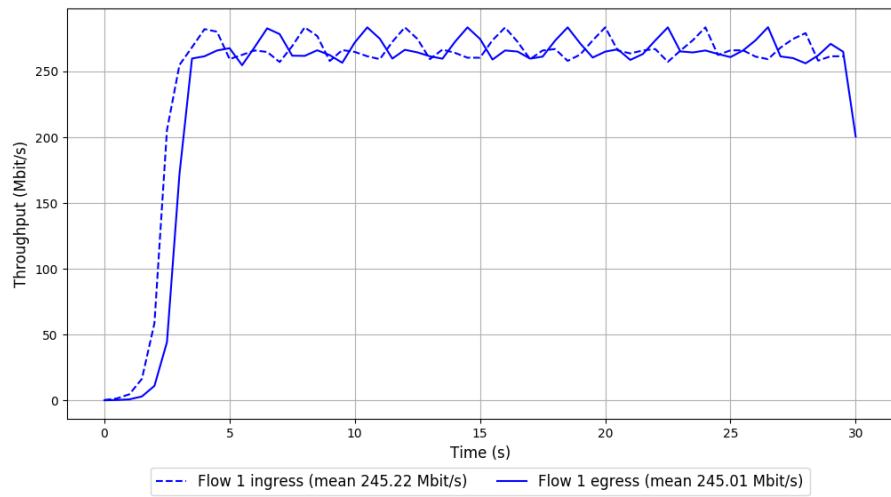


Run 1: Statistics of TCP Vegas

```
Start at: 2018-10-26 08:45:17
End at: 2018-10-26 08:45:47
Local clock offset: -0.493 ms
Remote clock offset: -0.134 ms

# Below is generated by plot.py at 2018-10-26 11:46:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.01 Mbit/s
95th percentile per-packet one-way delay: 133.445 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.01 Mbit/s
95th percentile per-packet one-way delay: 133.445 ms
Loss rate: 0.97%
```

Run 1: Report of TCP Vegas — Data Link

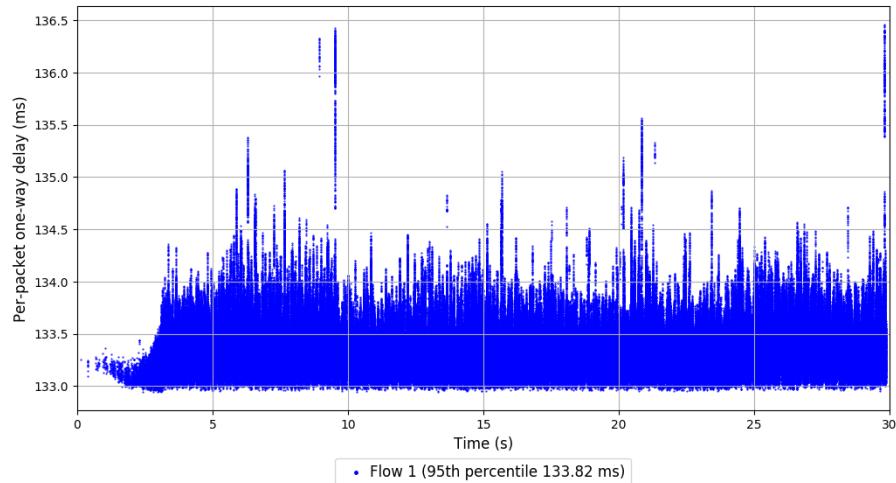
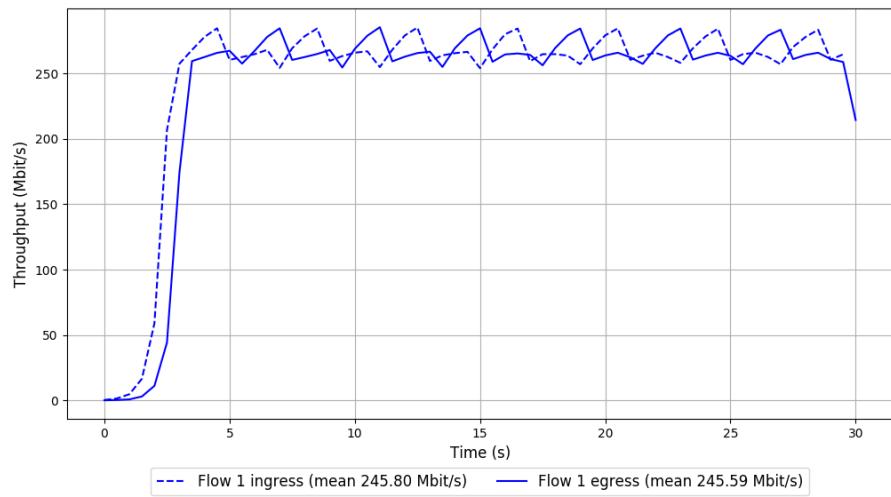


Run 2: Statistics of TCP Vegas

```
Start at: 2018-10-26 09:11:51
End at: 2018-10-26 09:12:21
Local clock offset: 0.067 ms
Remote clock offset: -0.207 ms

# Below is generated by plot.py at 2018-10-26 11:46:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.59 Mbit/s
95th percentile per-packet one-way delay: 133.821 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.59 Mbit/s
95th percentile per-packet one-way delay: 133.821 ms
Loss rate: 0.97%
```

Run 2: Report of TCP Vegas — Data Link

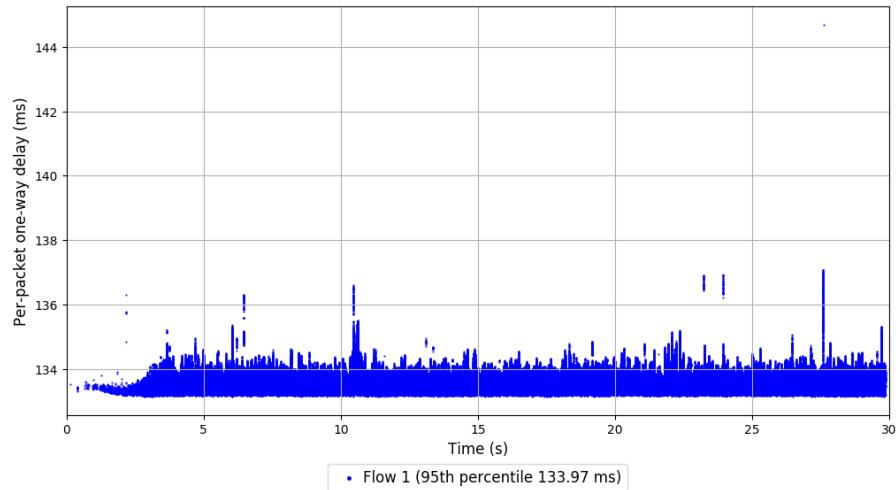
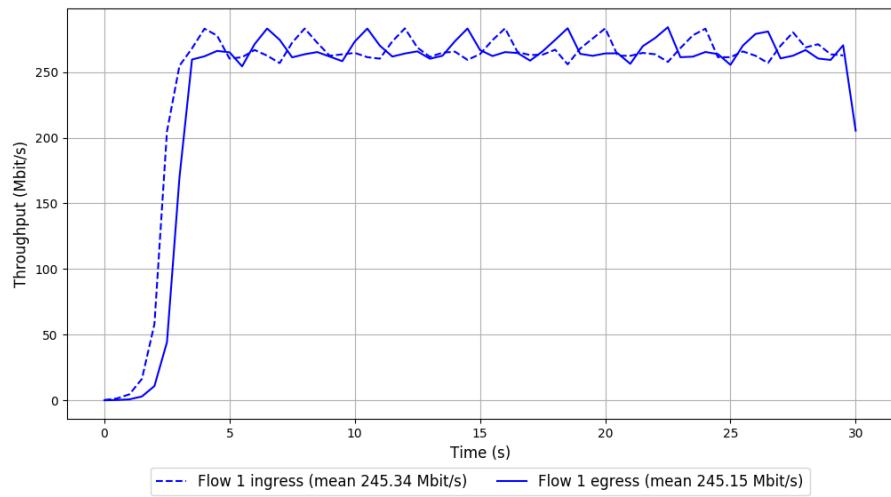


Run 3: Statistics of TCP Vegas

```
Start at: 2018-10-26 09:38:10
End at: 2018-10-26 09:38:40
Local clock offset: -0.266 ms
Remote clock offset: -0.408 ms

# Below is generated by plot.py at 2018-10-26 11:46:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.15 Mbit/s
95th percentile per-packet one-way delay: 133.968 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 245.15 Mbit/s
95th percentile per-packet one-way delay: 133.968 ms
Loss rate: 0.97%
```

Run 3: Report of TCP Vegas — Data Link

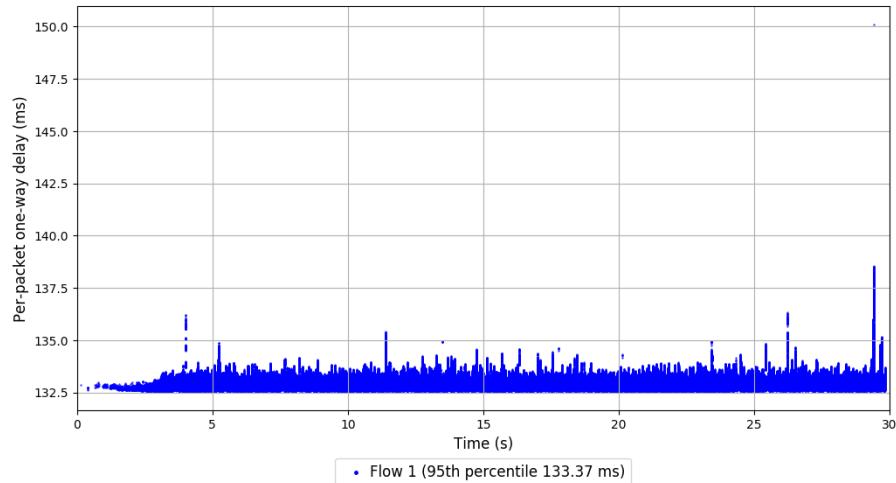
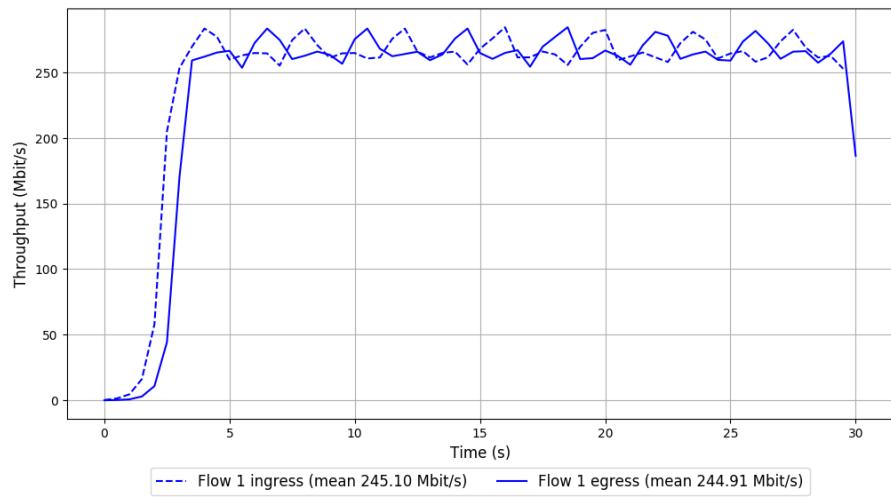


Run 4: Statistics of TCP Vegas

```
Start at: 2018-10-26 10:04:19
End at: 2018-10-26 10:04:49
Local clock offset: -0.427 ms
Remote clock offset: -0.123 ms

# Below is generated by plot.py at 2018-10-26 11:46:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 244.91 Mbit/s
95th percentile per-packet one-way delay: 133.371 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 244.91 Mbit/s
95th percentile per-packet one-way delay: 133.371 ms
Loss rate: 0.97%
```

Run 4: Report of TCP Vegas — Data Link

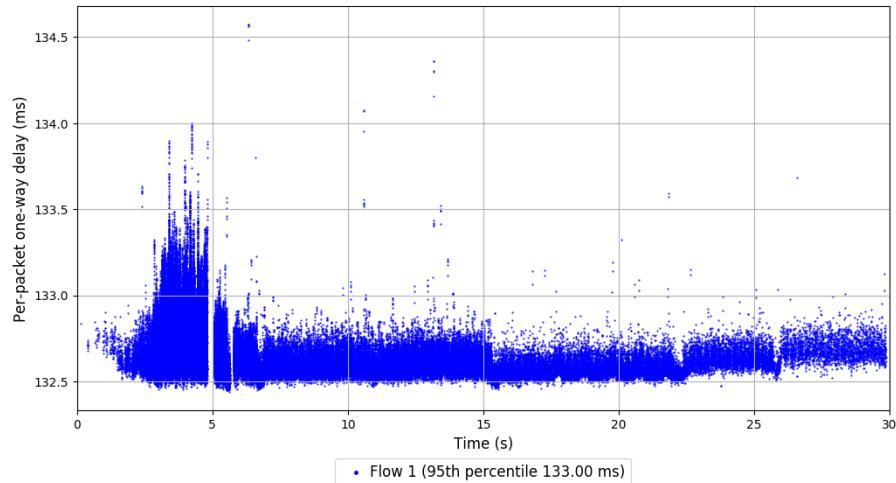
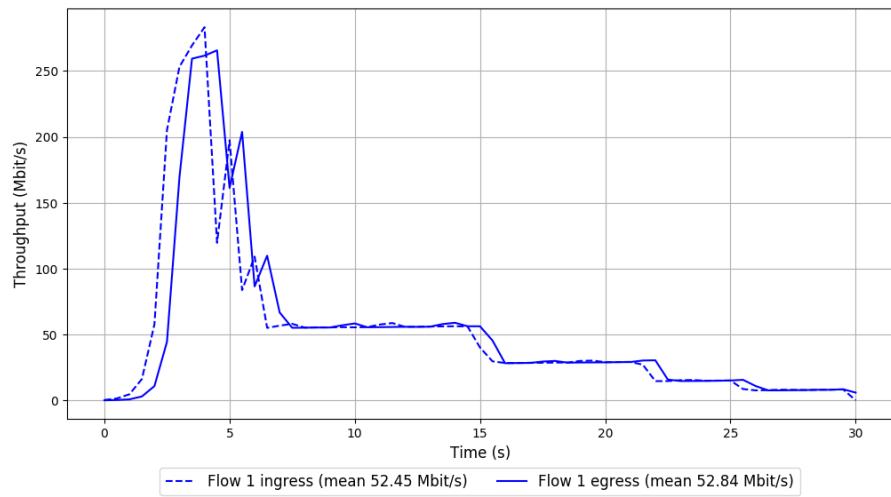


Run 5: Statistics of TCP Vegas

```
Start at: 2018-10-26 10:30:14
End at: 2018-10-26 10:30:44
Local clock offset: -0.832 ms
Remote clock offset: -0.123 ms

# Below is generated by plot.py at 2018-10-26 11:46:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.84 Mbit/s
95th percentile per-packet one-way delay: 132.999 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 52.84 Mbit/s
95th percentile per-packet one-way delay: 132.999 ms
Loss rate: 0.14%
```

Run 5: Report of TCP Vegas — Data Link

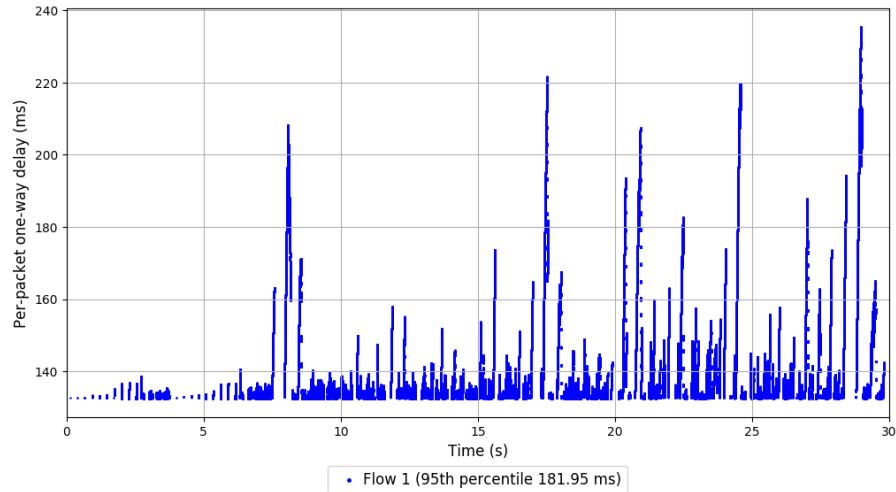
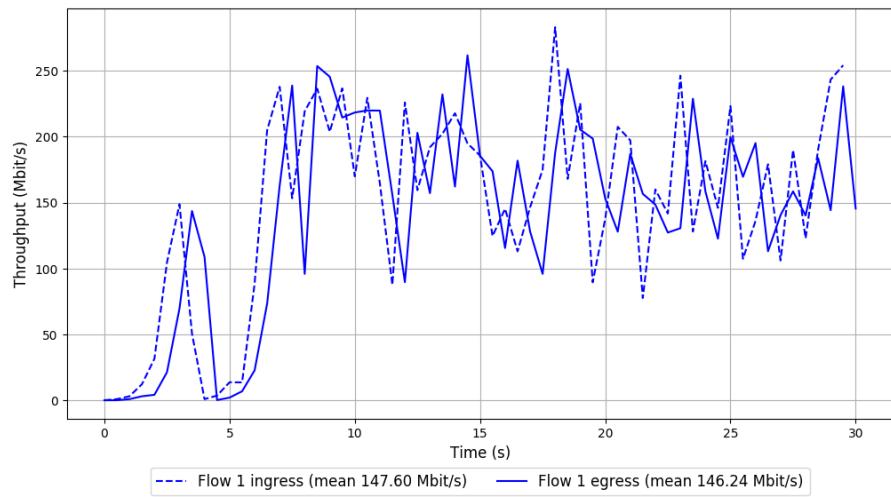


Run 1: Statistics of Verus

```
Start at: 2018-10-26 08:40:17
End at: 2018-10-26 08:40:47
Local clock offset: -0.314 ms
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-10-26 11:49:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 146.24 Mbit/s
95th percentile per-packet one-way delay: 181.948 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 146.24 Mbit/s
95th percentile per-packet one-way delay: 181.948 ms
Loss rate: 1.81%
```

Run 1: Report of Verus — Data Link

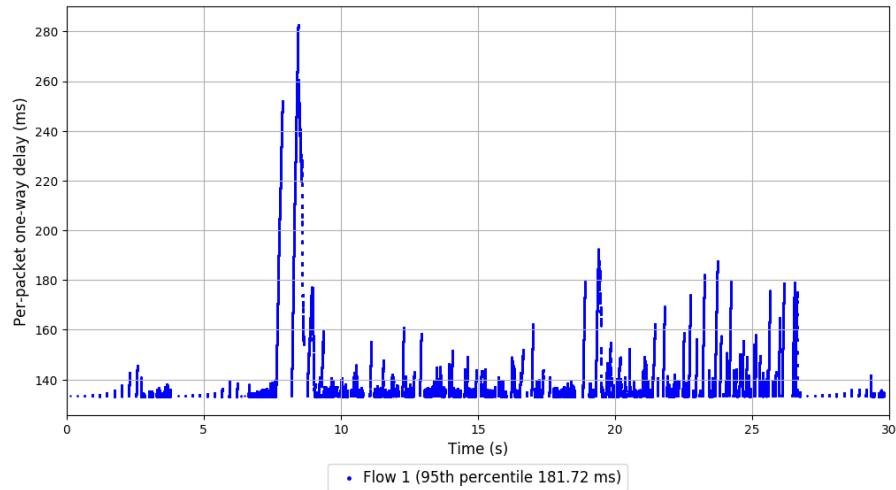
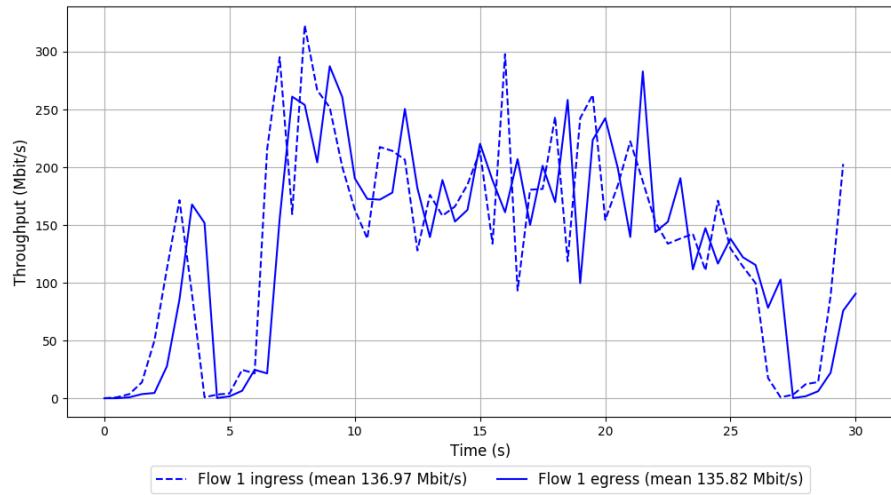


Run 2: Statistics of Verus

```
Start at: 2018-10-26 09:07:02
End at: 2018-10-26 09:07:32
Local clock offset: 0.271 ms
Remote clock offset: -0.186 ms

# Below is generated by plot.py at 2018-10-26 11:49:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 135.82 Mbit/s
95th percentile per-packet one-way delay: 181.721 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 135.82 Mbit/s
95th percentile per-packet one-way delay: 181.721 ms
Loss rate: 1.72%
```

Run 2: Report of Verus — Data Link

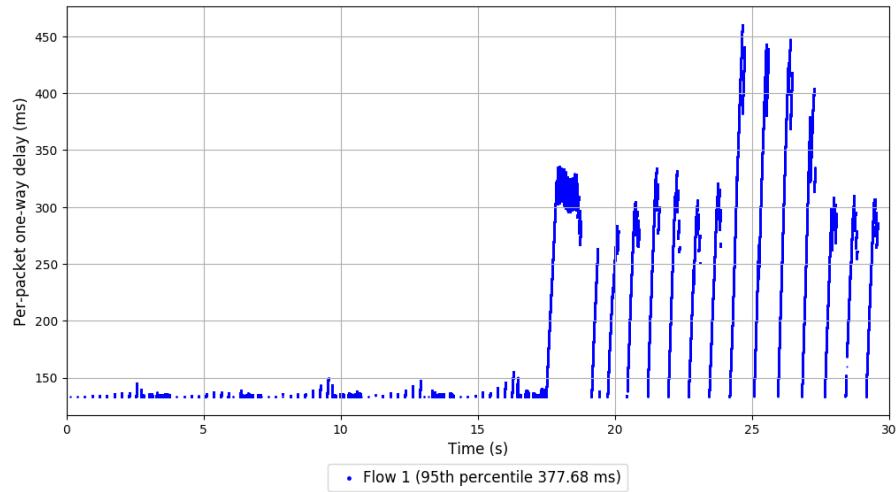
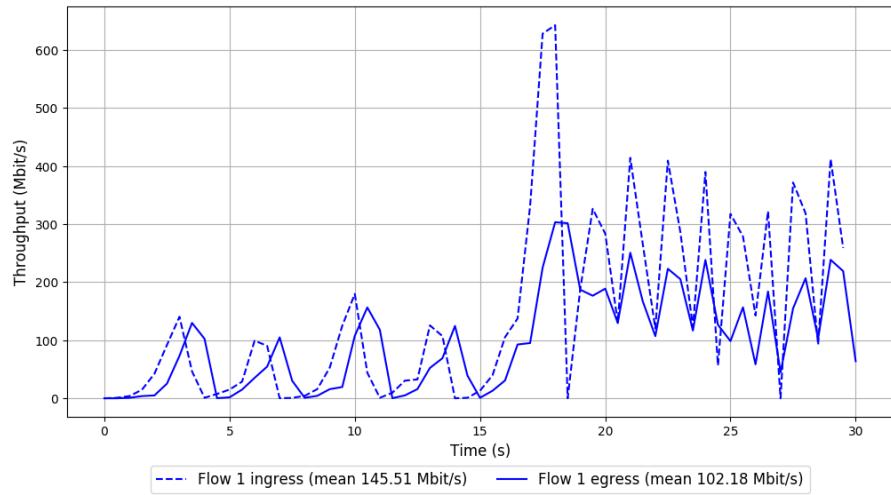


Run 3: Statistics of Verus

```
Start at: 2018-10-26 09:33:27
End at: 2018-10-26 09:33:57
Local clock offset: 0.167 ms
Remote clock offset: -0.041 ms

# Below is generated by plot.py at 2018-10-26 11:49:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 102.18 Mbit/s
95th percentile per-packet one-way delay: 377.677 ms
Loss rate: 30.95%
-- Flow 1:
Average throughput: 102.18 Mbit/s
95th percentile per-packet one-way delay: 377.677 ms
Loss rate: 30.95%
```

Run 3: Report of Verus — Data Link

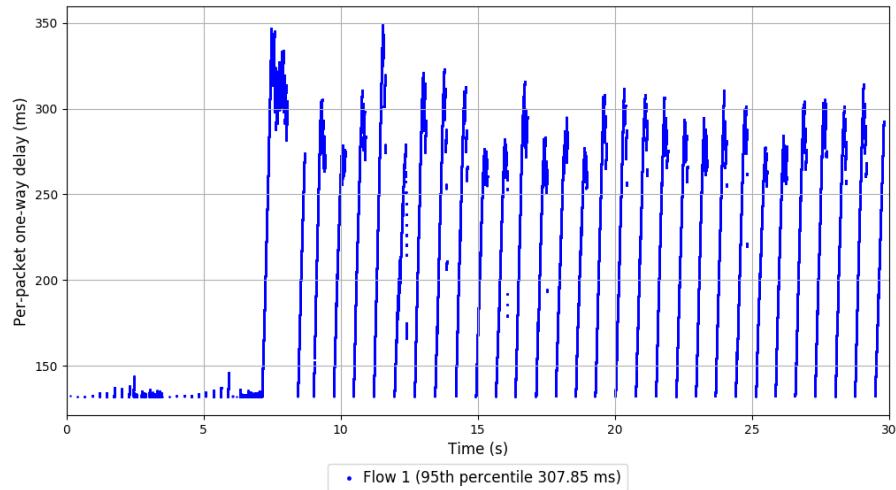
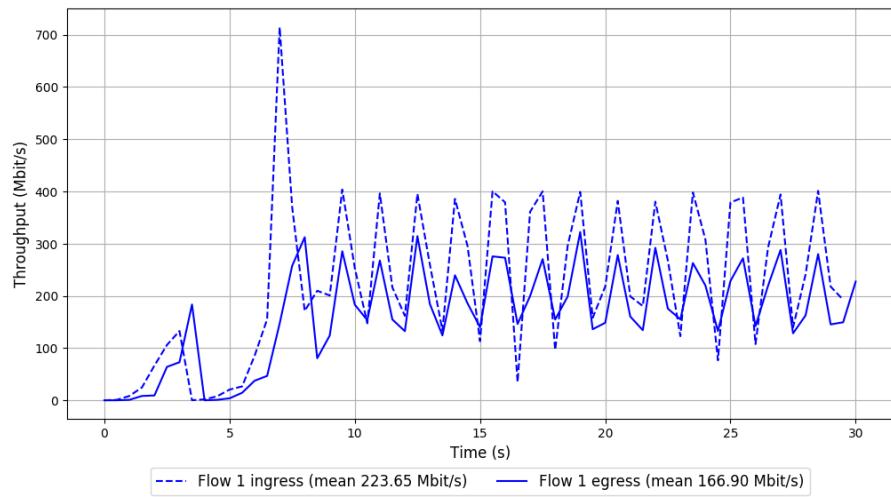


Run 4: Statistics of Verus

```
Start at: 2018-10-26 09:59:27
End at: 2018-10-26 09:59:57
Local clock offset: -0.258 ms
Remote clock offset: 0.293 ms

# Below is generated by plot.py at 2018-10-26 11:52:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 166.90 Mbit/s
95th percentile per-packet one-way delay: 307.848 ms
Loss rate: 25.36%
-- Flow 1:
Average throughput: 166.90 Mbit/s
95th percentile per-packet one-way delay: 307.848 ms
Loss rate: 25.36%
```

Run 4: Report of Verus — Data Link

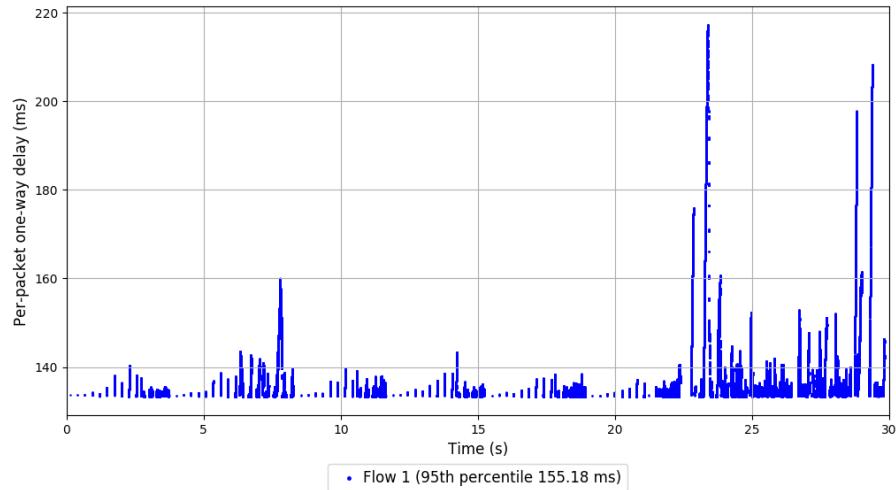
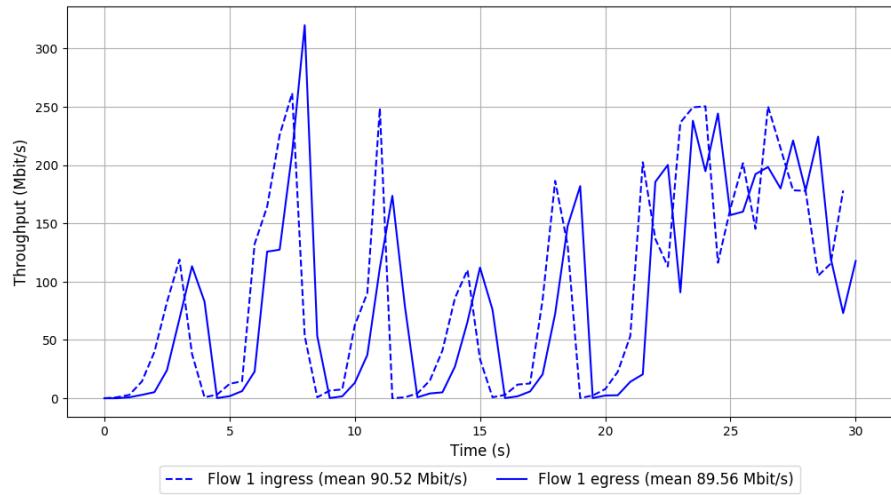


Run 5: Statistics of Verus

```
Start at: 2018-10-26 10:25:38
End at: 2018-10-26 10:26:08
Local clock offset: 0.321 ms
Remote clock offset: -0.187 ms

# Below is generated by plot.py at 2018-10-26 11:52:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.56 Mbit/s
95th percentile per-packet one-way delay: 155.183 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 89.56 Mbit/s
95th percentile per-packet one-way delay: 155.183 ms
Loss rate: 1.93%
```

Run 5: Report of Verus — Data Link

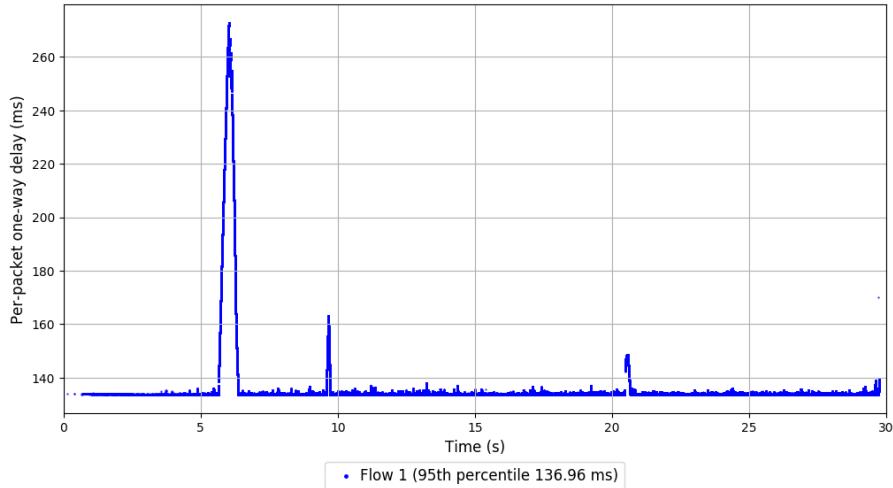
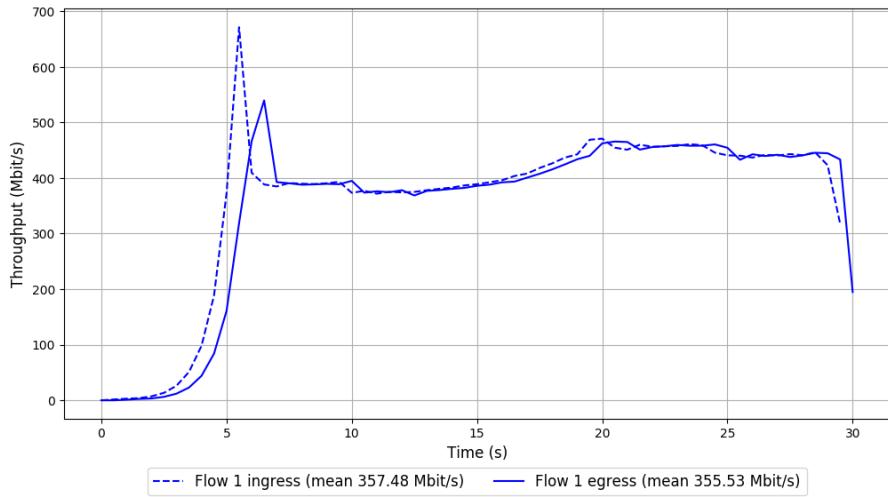


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-10-26 08:25:32
End at: 2018-10-26 08:26:02
Local clock offset: 0.238 ms
Remote clock offset: -0.47 ms

# Below is generated by plot.py at 2018-10-26 11:52:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 355.53 Mbit/s
95th percentile per-packet one-way delay: 136.962 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 355.53 Mbit/s
95th percentile per-packet one-way delay: 136.962 ms
Loss rate: 1.43%
```

Run 1: Report of PCC-Vivace — Data Link

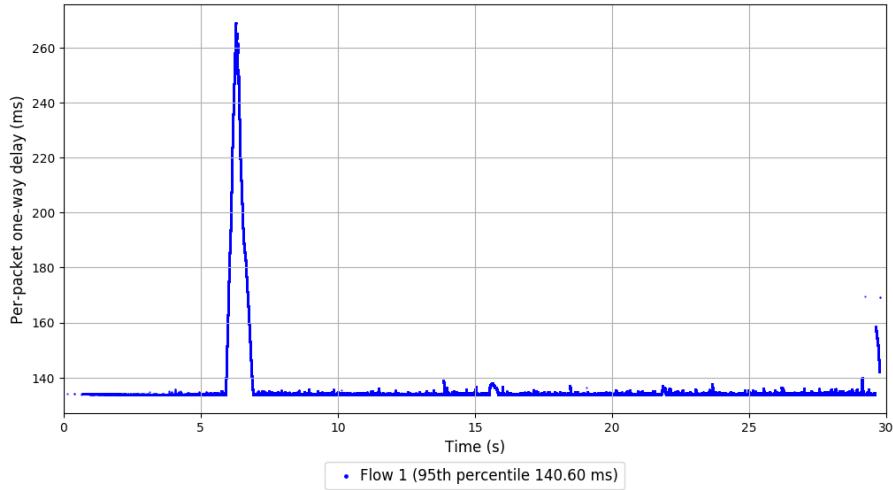
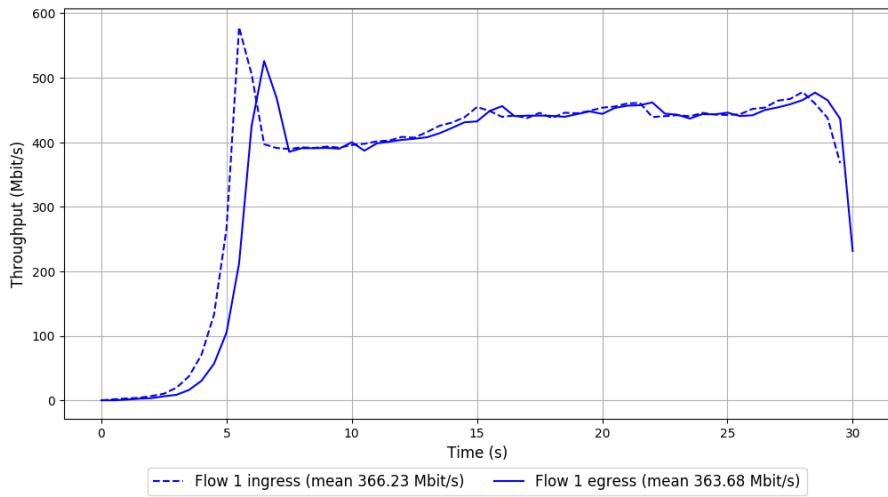


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-10-26 08:52:13
End at: 2018-10-26 08:52:43
Local clock offset: 0.62 ms
Remote clock offset: -0.157 ms

# Below is generated by plot.py at 2018-10-26 11:52:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 363.68 Mbit/s
95th percentile per-packet one-way delay: 140.598 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 363.68 Mbit/s
95th percentile per-packet one-way delay: 140.598 ms
Loss rate: 1.53%
```

Run 2: Report of PCC-Vivace — Data Link

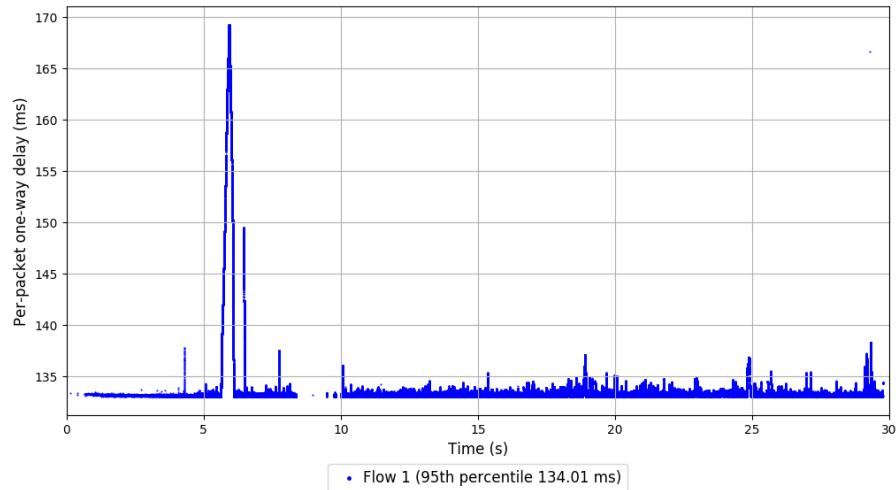
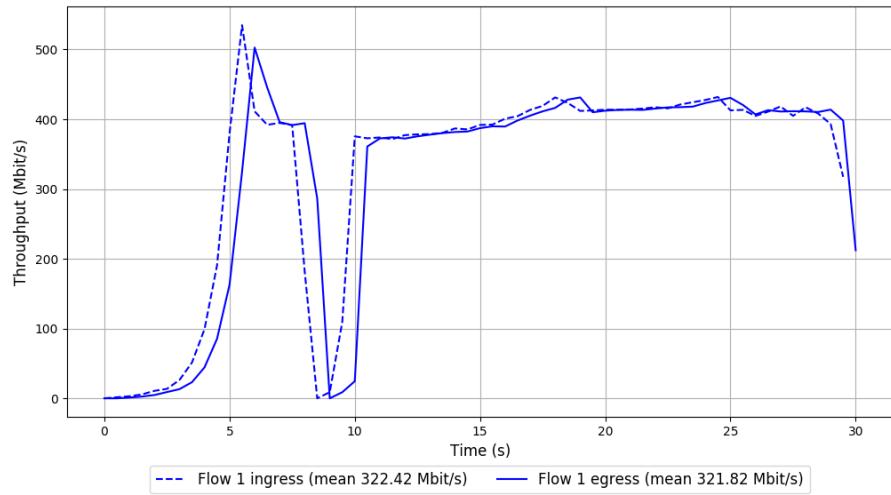


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-10-26 09:18:47
End at: 2018-10-26 09:19:17
Local clock offset: 0.29 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2018-10-26 11:52:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 321.82 Mbit/s
95th percentile per-packet one-way delay: 134.014 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 321.82 Mbit/s
95th percentile per-packet one-way delay: 134.014 ms
Loss rate: 1.08%
```

Run 3: Report of PCC-Vivace — Data Link

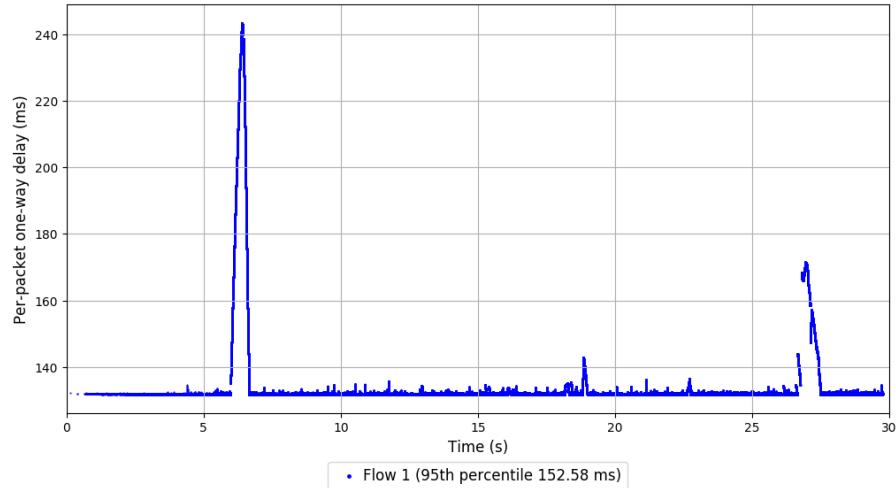
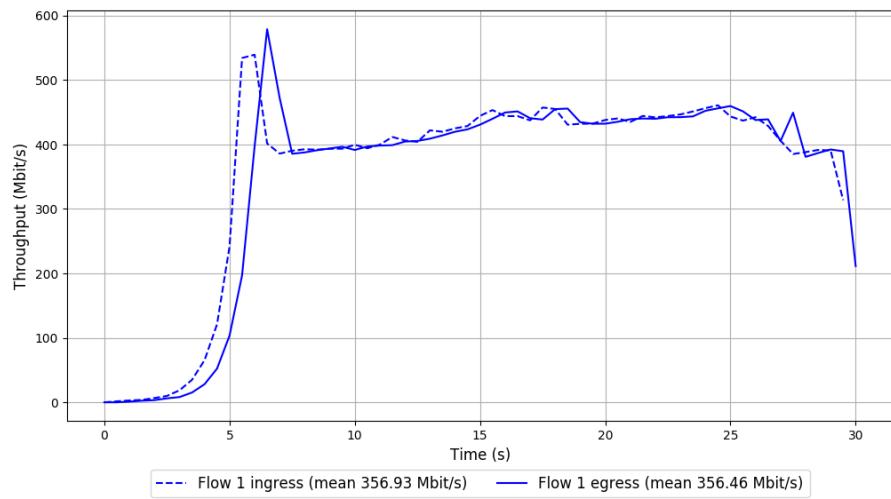


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-10-26 09:45:11
End at: 2018-10-26 09:45:41
Local clock offset: -0.747 ms
Remote clock offset: 0.365 ms

# Below is generated by plot.py at 2018-10-26 11:53:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 356.46 Mbit/s
95th percentile per-packet one-way delay: 152.581 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 356.46 Mbit/s
95th percentile per-packet one-way delay: 152.581 ms
Loss rate: 1.02%
```

Run 4: Report of PCC-Vivace — Data Link

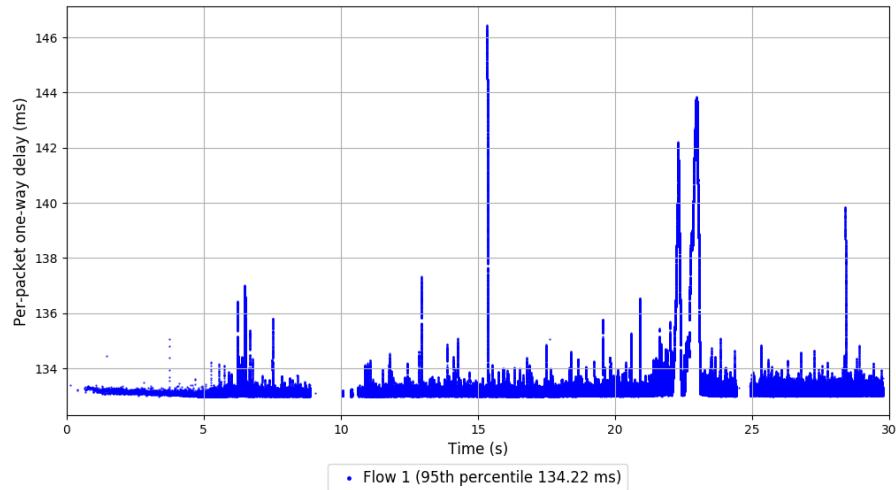
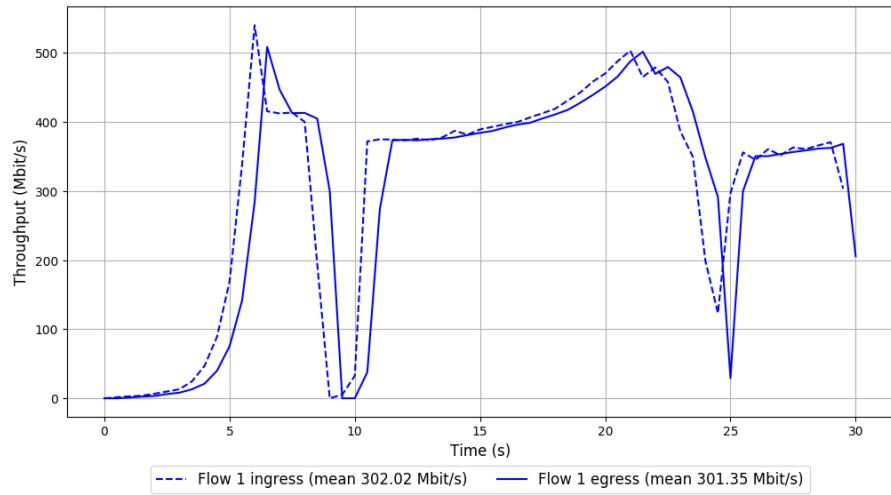


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-10-26 10:11:11
End at: 2018-10-26 10:11:41
Local clock offset: 0.219 ms
Remote clock offset: -0.474 ms

# Below is generated by plot.py at 2018-10-26 11:53:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 301.35 Mbit/s
95th percentile per-packet one-way delay: 134.219 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 301.35 Mbit/s
95th percentile per-packet one-way delay: 134.219 ms
Loss rate: 1.11%
```

Run 5: Report of PCC-Vivace — Data Link

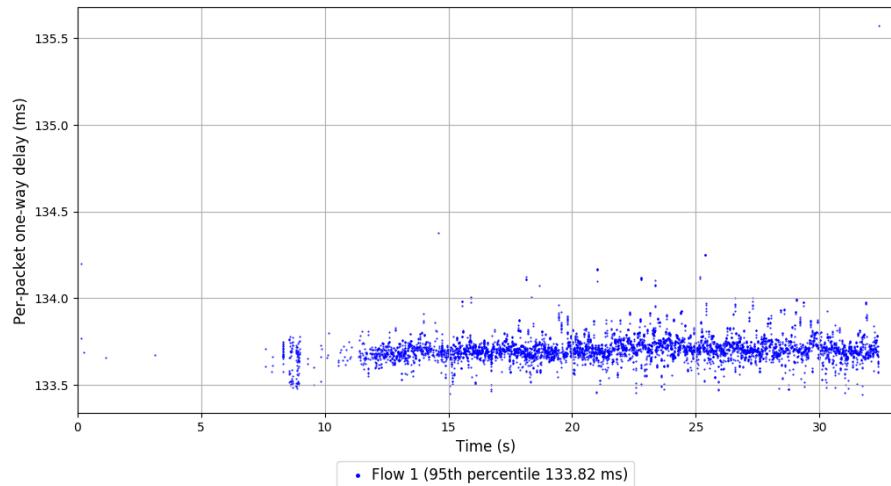
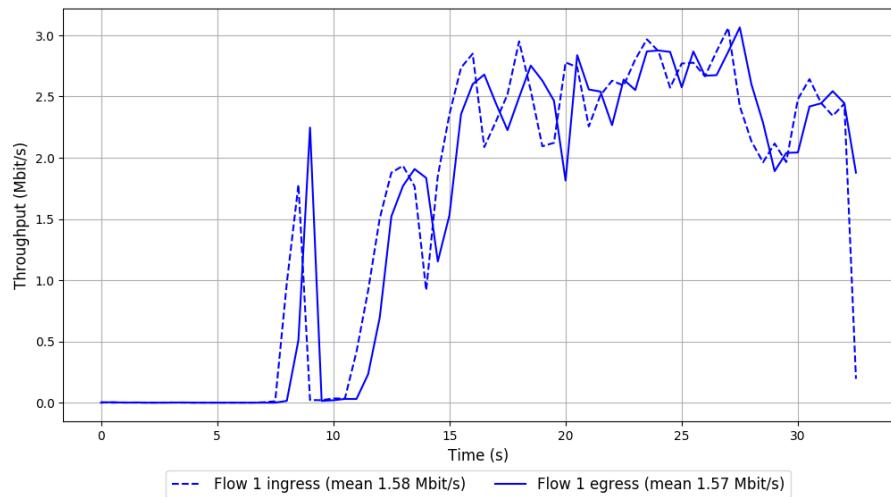


```
Run 1: Statistics of WebRTC media
```

```
Start at: 2018-10-26 08:35:53
End at: 2018-10-26 08:36:23
Local clock offset: 0.612 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2018-10-26 11:53:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 133.817 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 133.817 ms
Loss rate: 1.31%
```

Run 1: Report of WebRTC media — Data Link

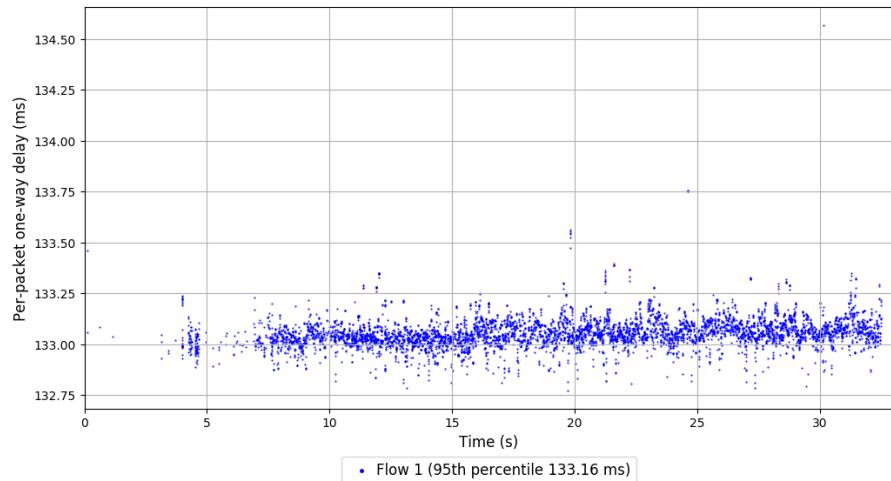
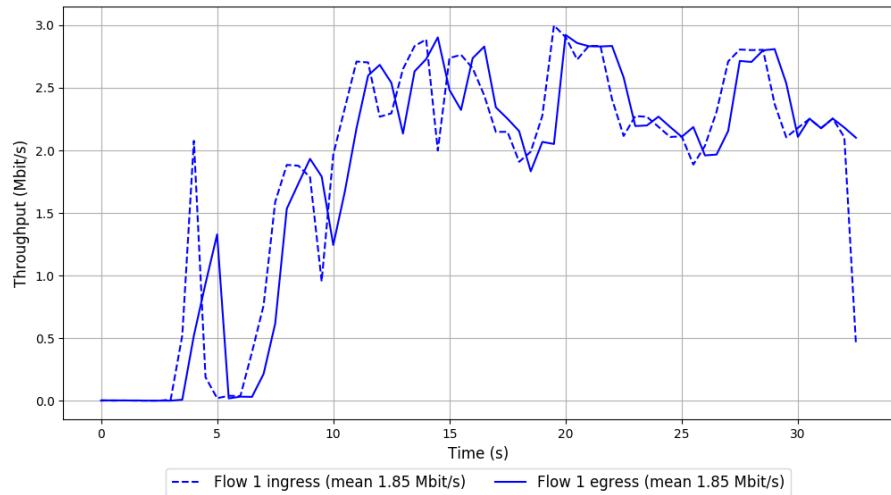


Run 2: Statistics of WebRTC media

```
Start at: 2018-10-26 09:02:23
End at: 2018-10-26 09:02:53
Local clock offset: -0.094 ms
Remote clock offset: -0.148 ms

# Below is generated by plot.py at 2018-10-26 11:53:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 133.164 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 133.164 ms
Loss rate: 0.87%
```

Run 2: Report of WebRTC media — Data Link

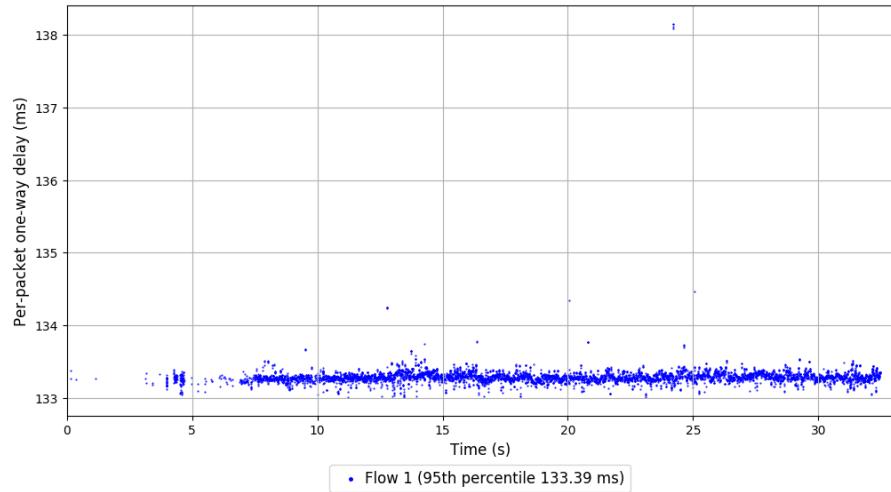
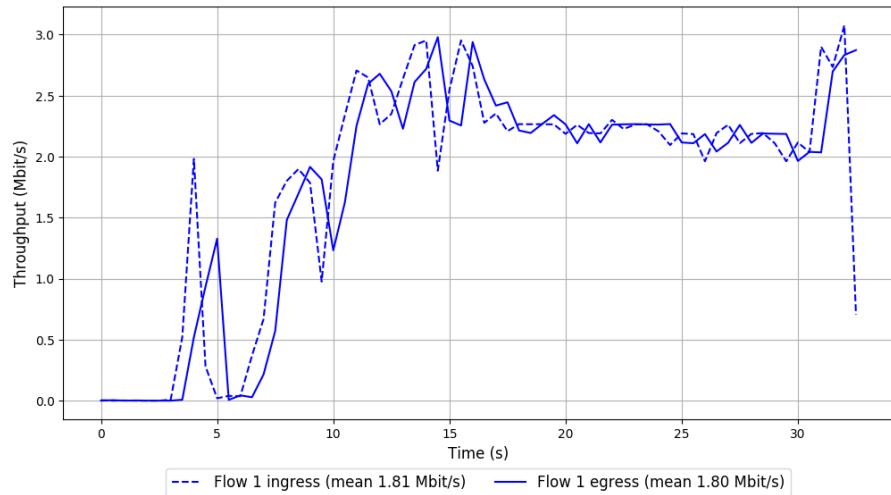


Run 3: Statistics of WebRTC media

```
Start at: 2018-10-26 09:29:10
End at: 2018-10-26 09:29:40
Local clock offset: 0.103 ms
Remote clock offset: -0.076 ms

# Below is generated by plot.py at 2018-10-26 11:53:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 133.394 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 133.394 ms
Loss rate: 1.37%
```

Run 3: Report of WebRTC media — Data Link

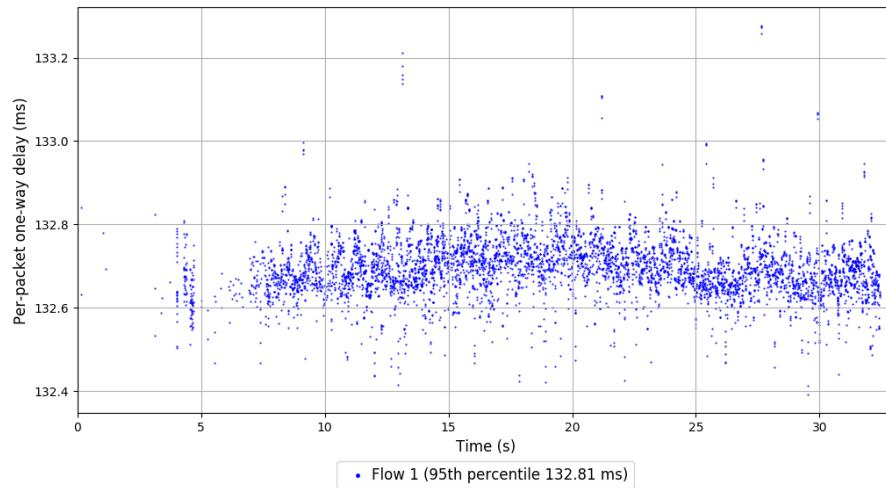
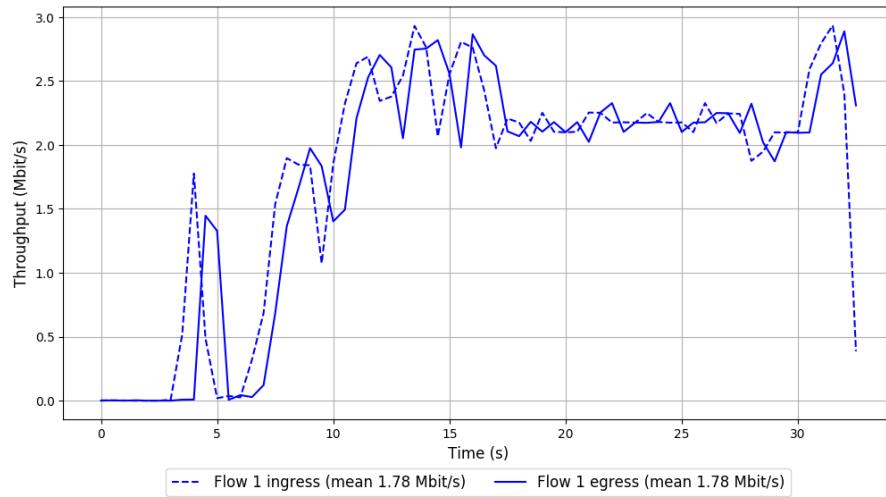


Run 4: Statistics of WebRTC media

```
Start at: 2018-10-26 09:55:10
End at: 2018-10-26 09:55:40
Local clock offset: -0.466 ms
Remote clock offset: -0.11 ms

# Below is generated by plot.py at 2018-10-26 11:53:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 132.805 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 132.805 ms
Loss rate: 1.08%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-10-26 10:21:14
End at: 2018-10-26 10:21:44
Local clock offset: 0.353 ms
Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2018-10-26 11:53:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 132.856 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 132.856 ms
Loss rate: 0.81%
```

Run 5: Report of WebRTC media — Data Link

