

Pantheon Report

Generated at 2018-11-15 09:51:57 (UTC).
Data path: Colombia on p4p1 (*remote*) → AWS Brazil 2 on ens5 (*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 gps.ntp.br and have been applied to correct the timestamps in logs.

System info:

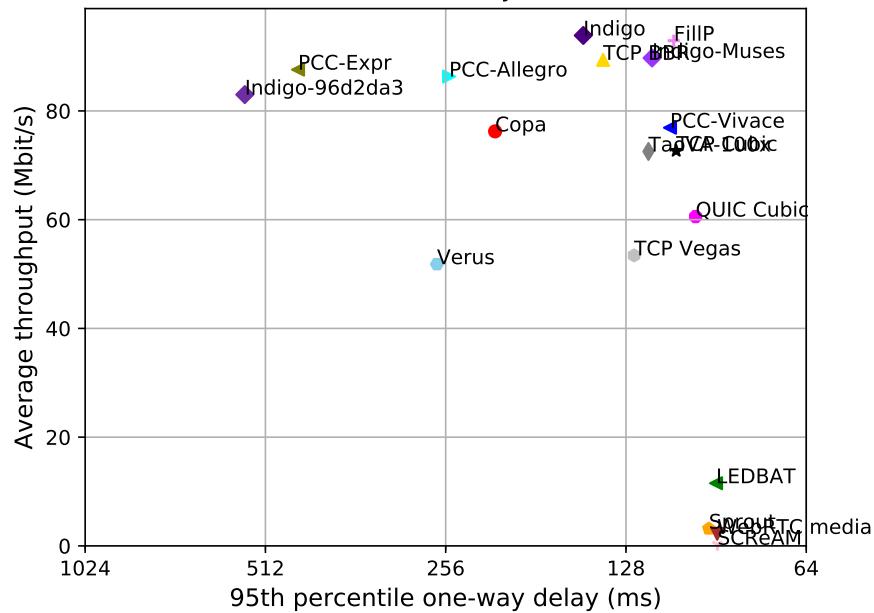
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

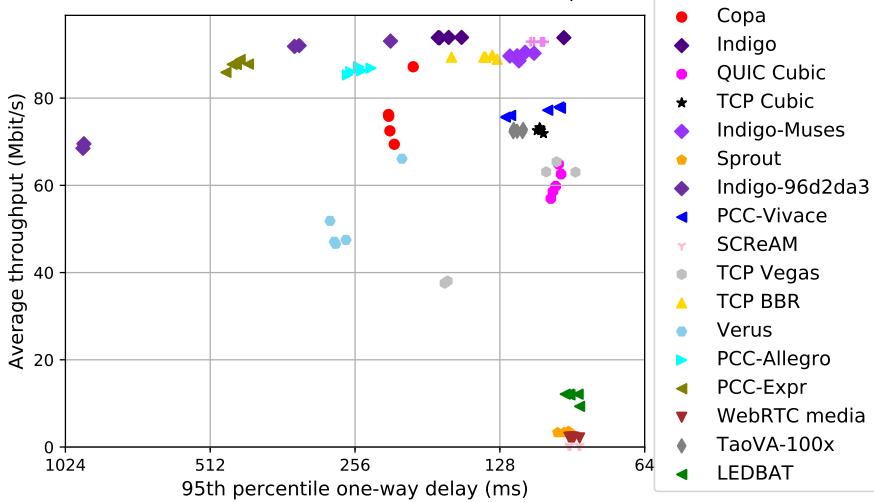
```
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
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 Colombia to AWS Brazil 2, 5 runs of 30s each per scheme
(mean of all runs by scheme)



test from Colombia to AWS Brazil 2, 5 runs of 30s each per scheme



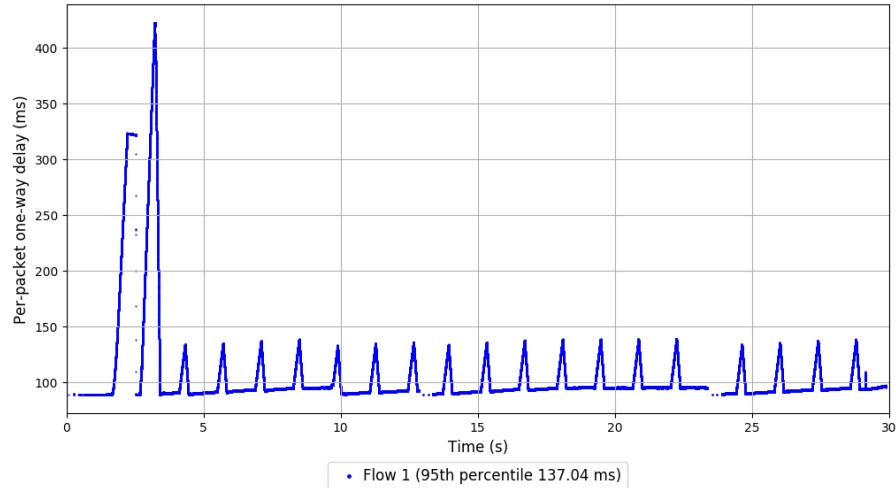
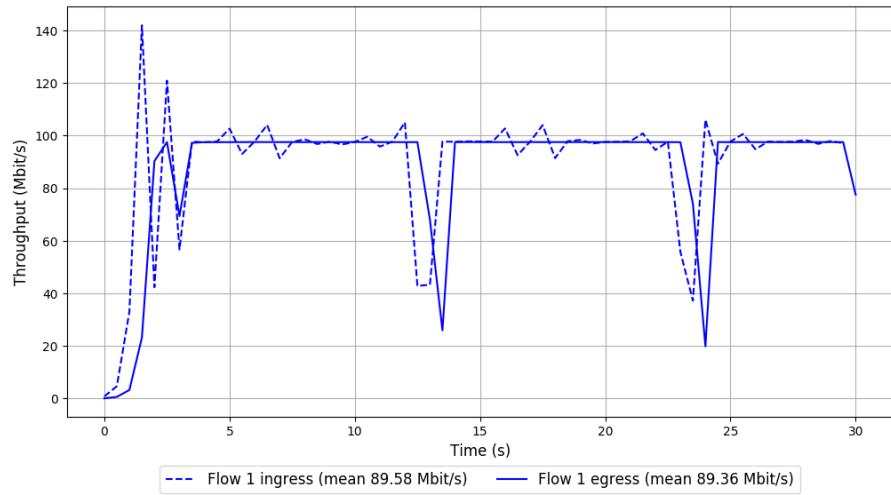
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	89.40	139.77	0.84
Copa	5	76.24	211.72	0.76
TCP Cubic	5	72.66	105.52	0.64
FillP	5	92.91	106.51	0.66
Indigo	5	93.88	150.84	1.92
Indigo-96d2da3	5	83.00	554.25	7.24
LEDBAT	5	11.53	90.53	0.98
Indigo-Muses	5	89.74	115.77	0.95
PCC-Allegro	5	86.33	252.69	0.74
PCC-Expr	5	87.59	451.67	1.55
QUIC Cubic	5	60.57	97.94	0.84
SCReAM	5	0.22	90.06	0.61
Sprout	5	3.17	93.08	0.76
TaoVA-100x	5	72.54	117.40	0.65
TCP Vegas	5	53.43	124.07	0.69
Verus	5	51.82	264.79	0.73
PCC-Vivace	5	76.91	108.07	0.75
WebRTC media	5	2.21	90.13	0.35

Run 1: Statistics of TCP BBR

```
Start at: 2018-11-15 08:11:43
End at: 2018-11-15 08:12:13
Local clock offset: -6.374 ms
Remote clock offset: 2.716 ms

# Below is generated by plot.py at 2018-11-15 09:42:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.36 Mbit/s
95th percentile per-packet one-way delay: 137.038 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 89.36 Mbit/s
95th percentile per-packet one-way delay: 137.038 ms
Loss rate: 0.82%
```

Run 1: Report of TCP BBR — Data Link

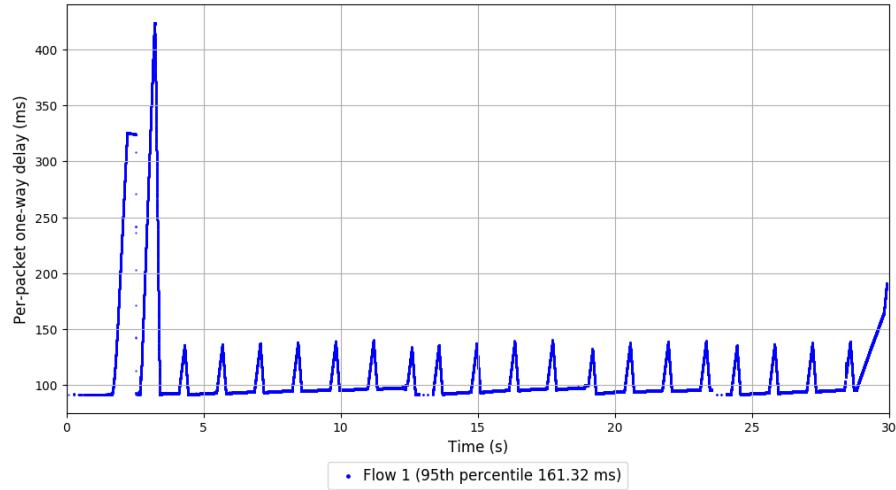
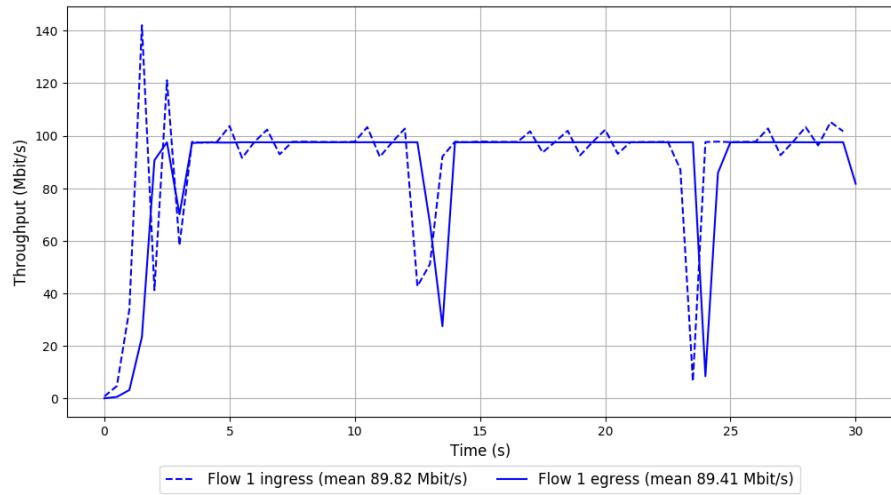


Run 2: Statistics of TCP BBR

```
Start at: 2018-11-15 08:33:09
End at: 2018-11-15 08:33:39
Local clock offset: -4.421 ms
Remote clock offset: -2.751 ms

# Below is generated by plot.py at 2018-11-15 09:42:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.41 Mbit/s
95th percentile per-packet one-way delay: 161.317 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 89.41 Mbit/s
95th percentile per-packet one-way delay: 161.317 ms
Loss rate: 1.03%
```

Run 2: Report of TCP BBR — Data Link

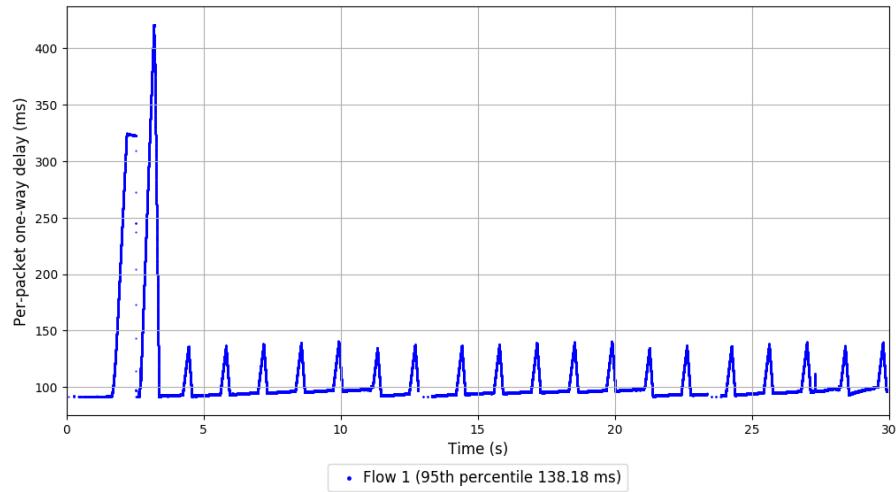
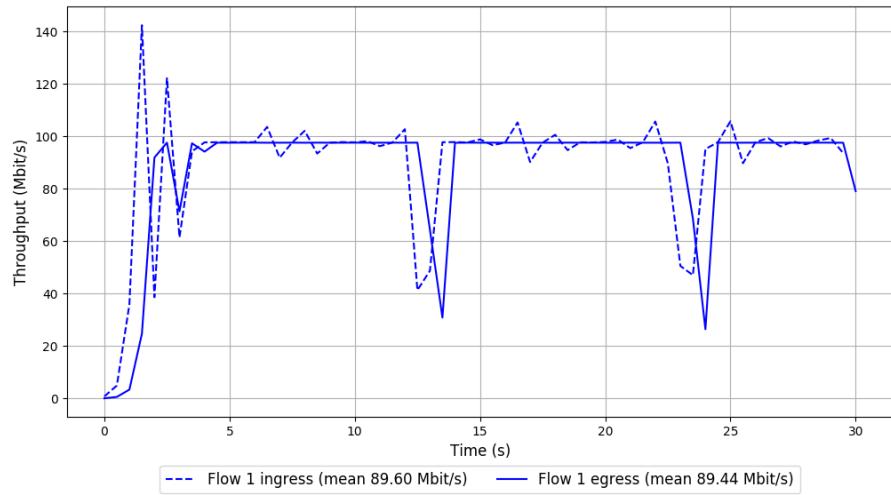


Run 3: Statistics of TCP BBR

```
Start at: 2018-11-15 08:54:31
End at: 2018-11-15 08:55:01
Local clock offset: -1.153 ms
Remote clock offset: -3.665 ms

# Below is generated by plot.py at 2018-11-15 09:42:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.44 Mbit/s
95th percentile per-packet one-way delay: 138.183 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 89.44 Mbit/s
95th percentile per-packet one-way delay: 138.183 ms
Loss rate: 0.75%
```

Run 3: Report of TCP BBR — Data Link

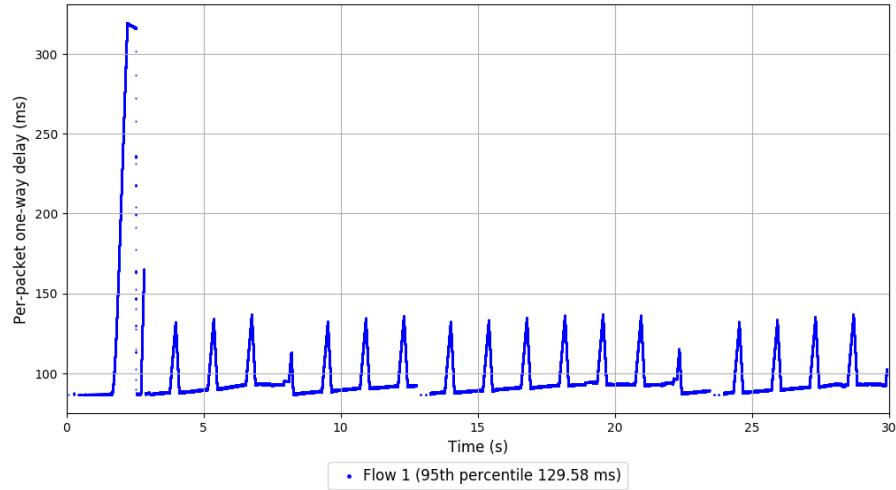
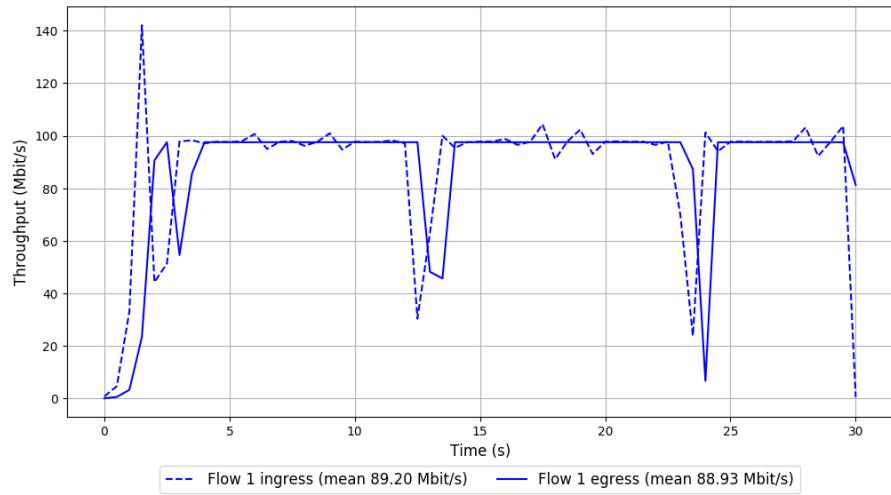


Run 4: Statistics of TCP BBR

```
Start at: 2018-11-15 09:15:50
End at: 2018-11-15 09:16:21
Local clock offset: -5.966 ms
Remote clock offset: 1.889 ms

# Below is generated by plot.py at 2018-11-15 09:42:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.93 Mbit/s
95th percentile per-packet one-way delay: 129.582 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 88.93 Mbit/s
95th percentile per-packet one-way delay: 129.582 ms
Loss rate: 0.88%
```

Run 4: Report of TCP BBR — Data Link

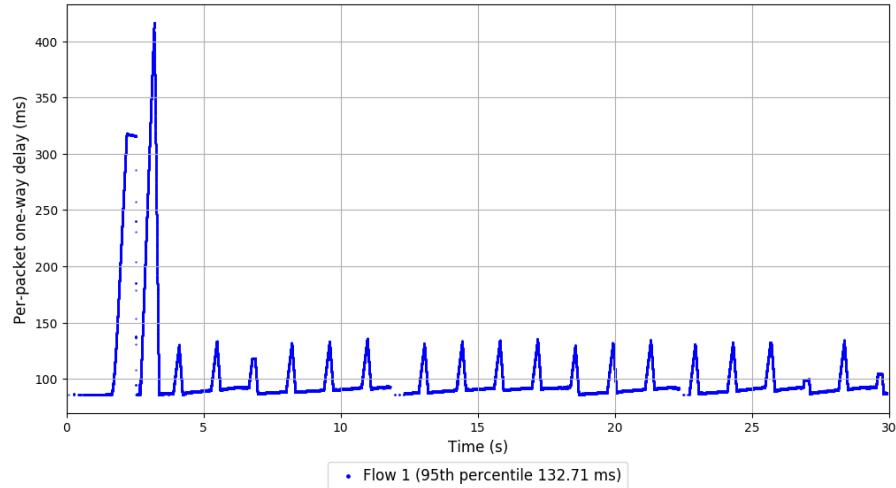
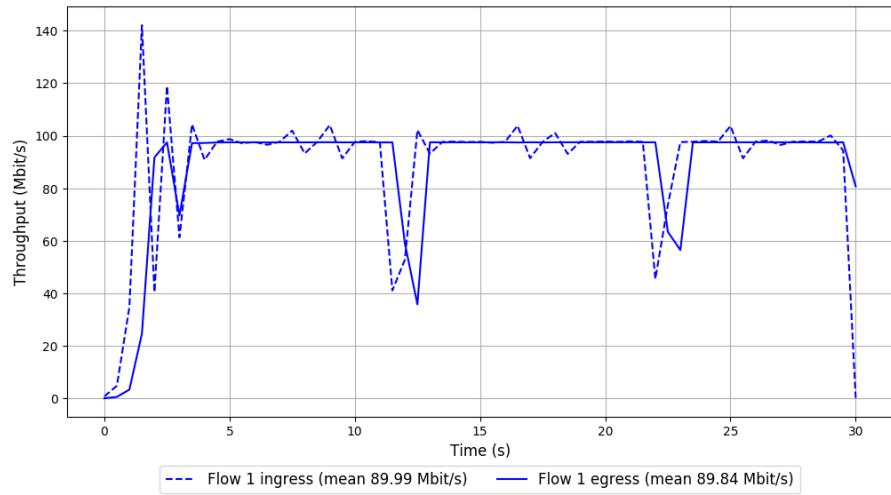


Run 5: Statistics of TCP BBR

```
Start at: 2018-11-15 09:37:17
End at: 2018-11-15 09:37:47
Local clock offset: -7.733 ms
Remote clock offset: 1.146 ms

# Below is generated by plot.py at 2018-11-15 09:42:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.84 Mbit/s
95th percentile per-packet one-way delay: 132.709 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 89.84 Mbit/s
95th percentile per-packet one-way delay: 132.709 ms
Loss rate: 0.74%
```

Run 5: Report of TCP BBR — Data Link

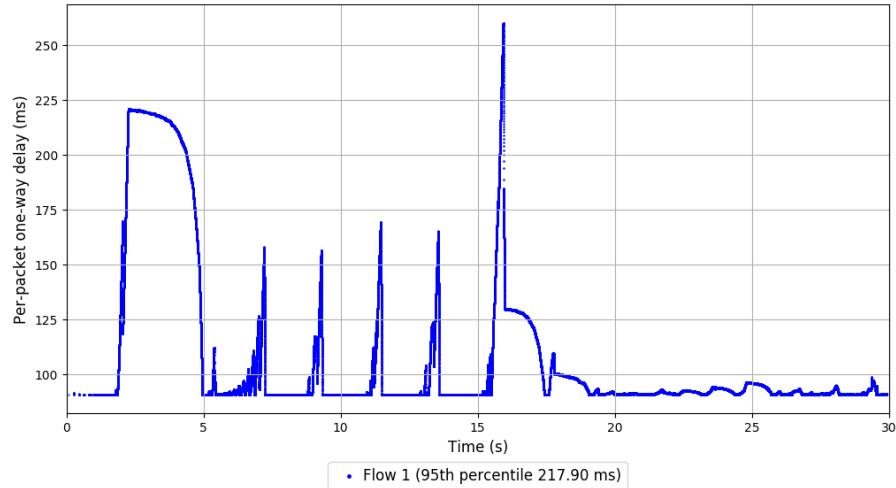
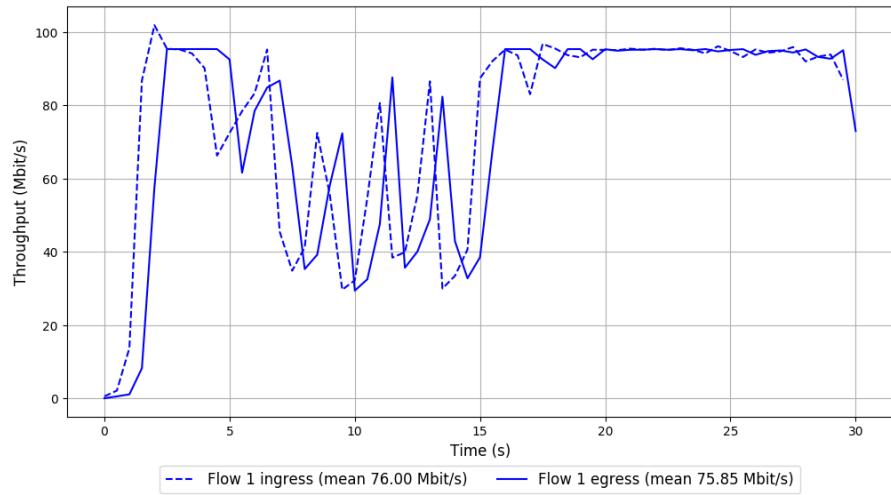


Run 1: Statistics of Copa

```
Start at: 2018-11-15 07:55:09
End at: 2018-11-15 07:55:39
Local clock offset: -7.608 ms
Remote clock offset: 2.021 ms

# Below is generated by plot.py at 2018-11-15 09:43:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.85 Mbit/s
95th percentile per-packet one-way delay: 217.897 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 75.85 Mbit/s
95th percentile per-packet one-way delay: 217.897 ms
Loss rate: 0.77%
```

Run 1: Report of Copa — Data Link

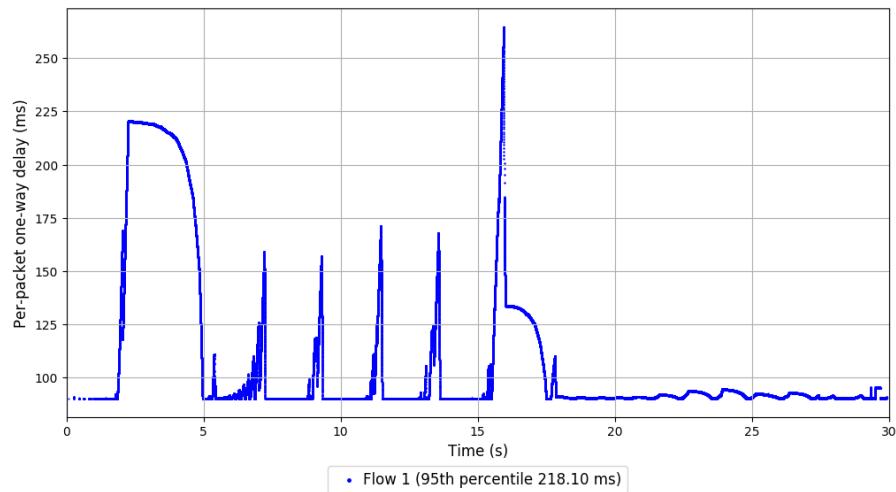
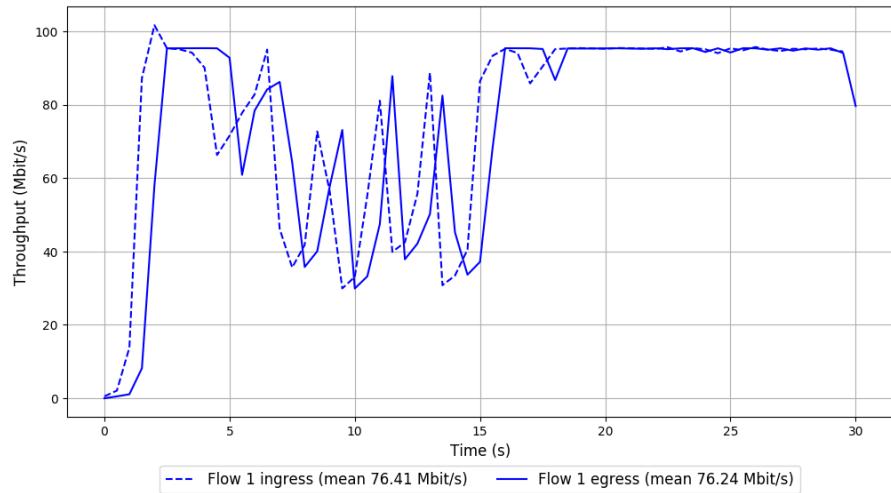


Run 2: Statistics of Copa

```
Start at: 2018-11-15 08:16:29
End at: 2018-11-15 08:16:59
Local clock offset: -7.149 ms
Remote clock offset: -0.342 ms

# Below is generated by plot.py at 2018-11-15 09:43:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 76.24 Mbit/s
95th percentile per-packet one-way delay: 218.101 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 76.24 Mbit/s
95th percentile per-packet one-way delay: 218.101 ms
Loss rate: 0.80%
```

Run 2: Report of Copa — Data Link

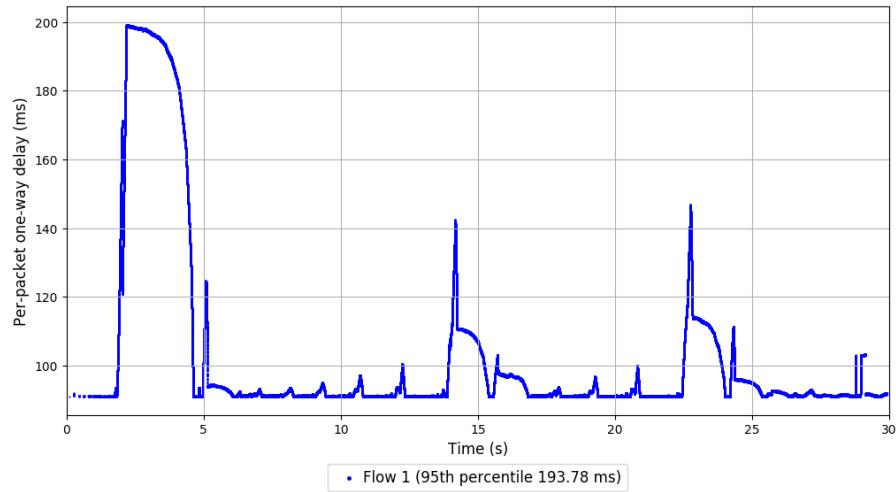
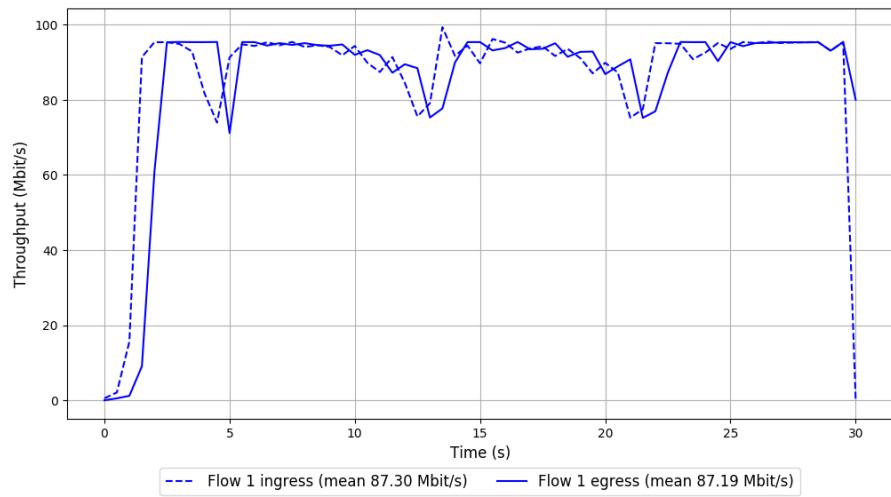


Run 3: Statistics of Copa

```
Start at: 2018-11-15 08:37:55
End at: 2018-11-15 08:38:25
Local clock offset: -3.244 ms
Remote clock offset: -3.203 ms

# Below is generated by plot.py at 2018-11-15 09:43:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.19 Mbit/s
95th percentile per-packet one-way delay: 193.780 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 87.19 Mbit/s
95th percentile per-packet one-way delay: 193.780 ms
Loss rate: 0.70%
```

Run 3: Report of Copa — Data Link

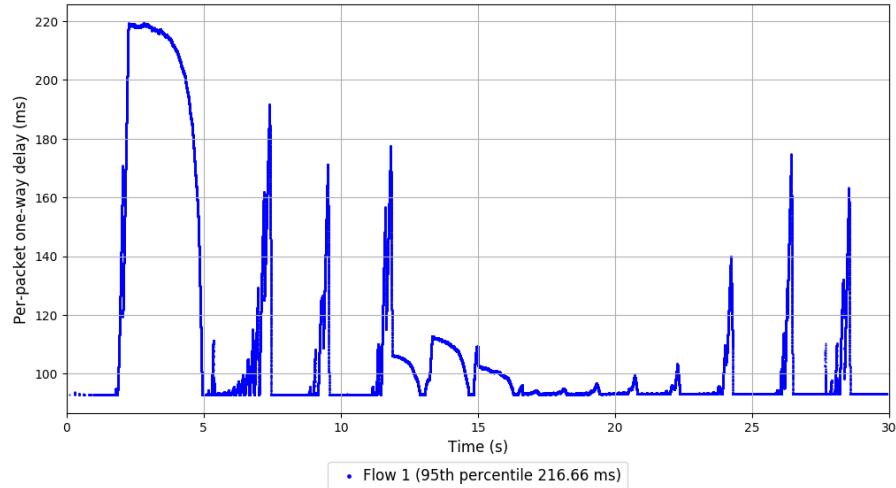
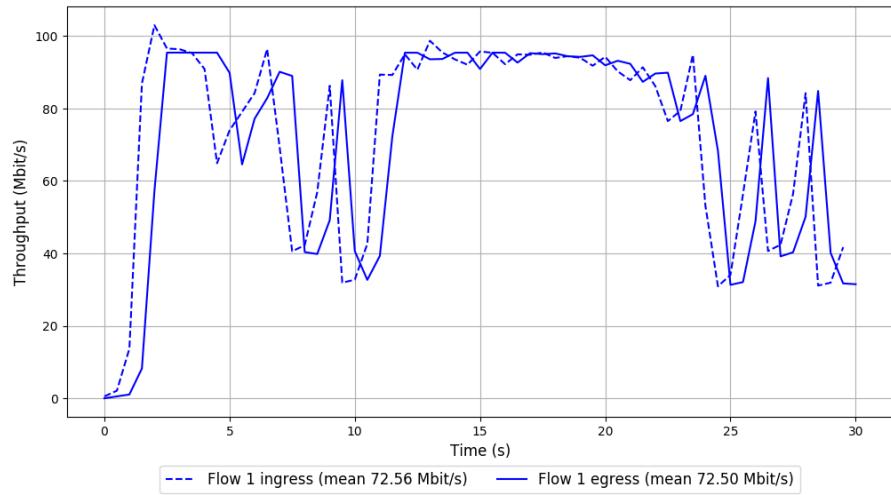


Run 4: Statistics of Copa

```
Start at: 2018-11-15 08:59:17
End at: 2018-11-15 08:59:47
Local clock offset: -1.818 ms
Remote clock offset: -3.843 ms

# Below is generated by plot.py at 2018-11-15 09:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.50 Mbit/s
95th percentile per-packet one-way delay: 216.657 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 72.50 Mbit/s
95th percentile per-packet one-way delay: 216.657 ms
Loss rate: 0.67%
```

Run 4: Report of Copa — Data Link

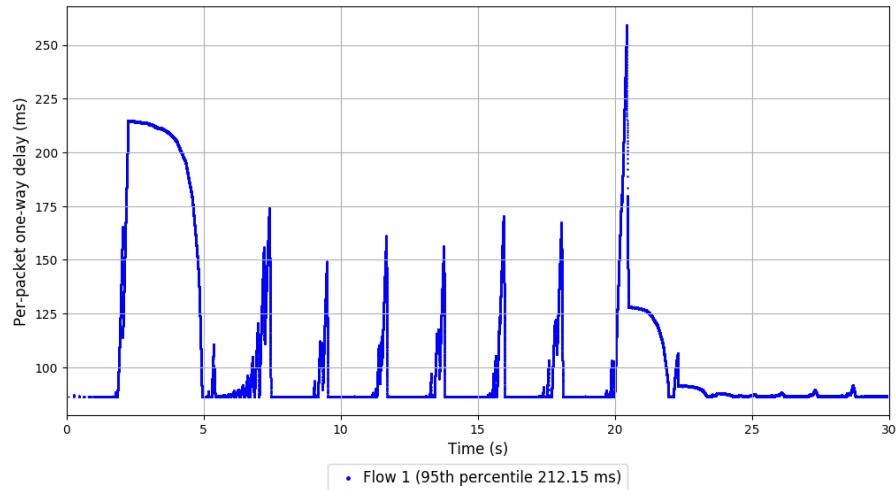
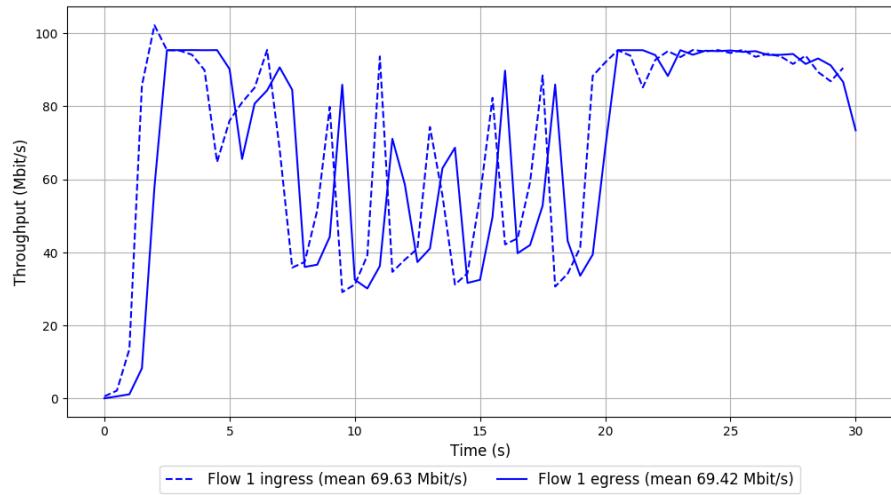


Run 5: Statistics of Copa

```
Start at: 2018-11-15 09:20:37
End at: 2018-11-15 09:21:07
Local clock offset: -7.073 ms
Remote clock offset: 0.708 ms

# Below is generated by plot.py at 2018-11-15 09:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.42 Mbit/s
95th percentile per-packet one-way delay: 212.151 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 69.42 Mbit/s
95th percentile per-packet one-way delay: 212.151 ms
Loss rate: 0.87%
```

Run 5: Report of Copa — Data Link

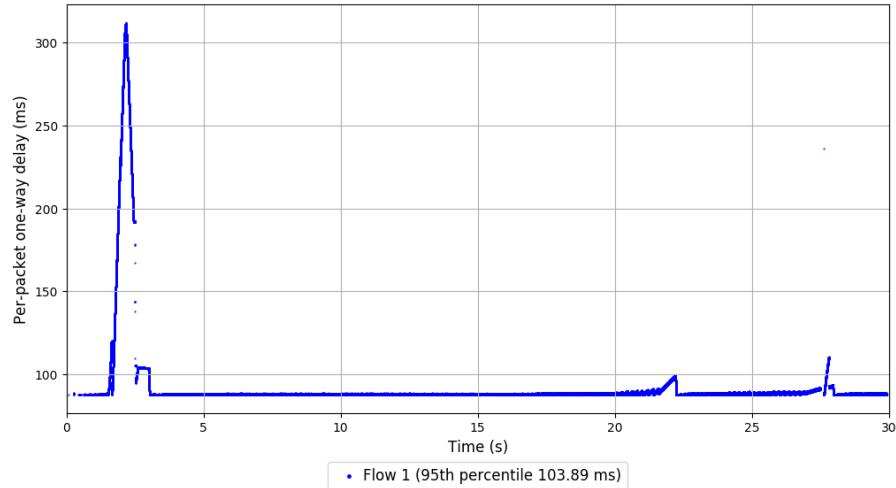
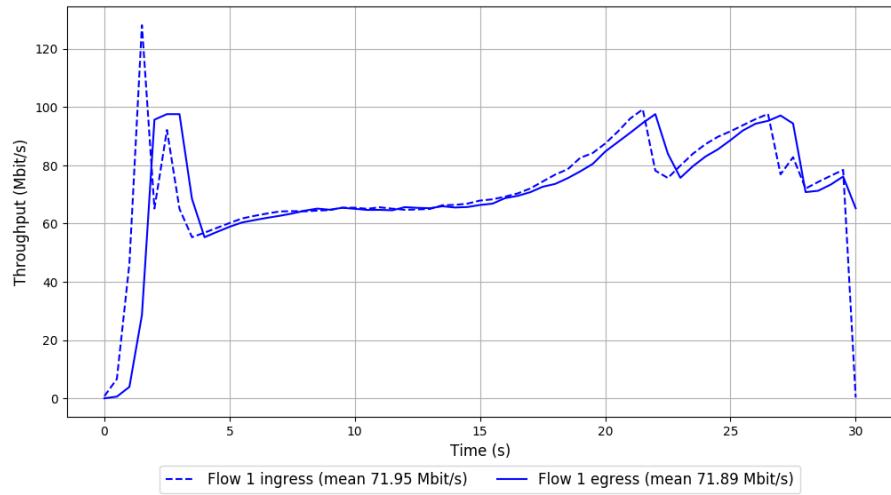


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-11-15 08:02:22
End at: 2018-11-15 08:02:52
Local clock offset: -6.507 ms
Remote clock offset: 4.866 ms

# Below is generated by plot.py at 2018-11-15 09:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 71.89 Mbit/s
95th percentile per-packet one-way delay: 103.891 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 71.89 Mbit/s
95th percentile per-packet one-way delay: 103.891 ms
Loss rate: 0.66%
```

Run 1: Report of TCP Cubic — Data Link

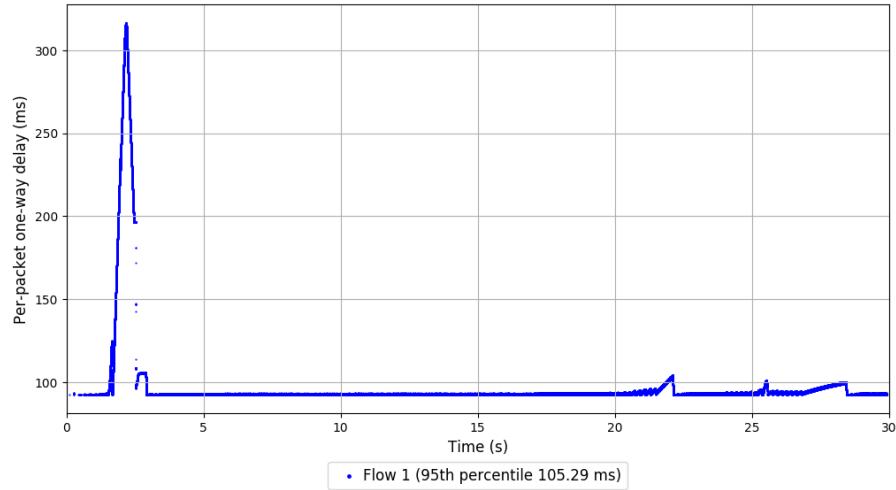
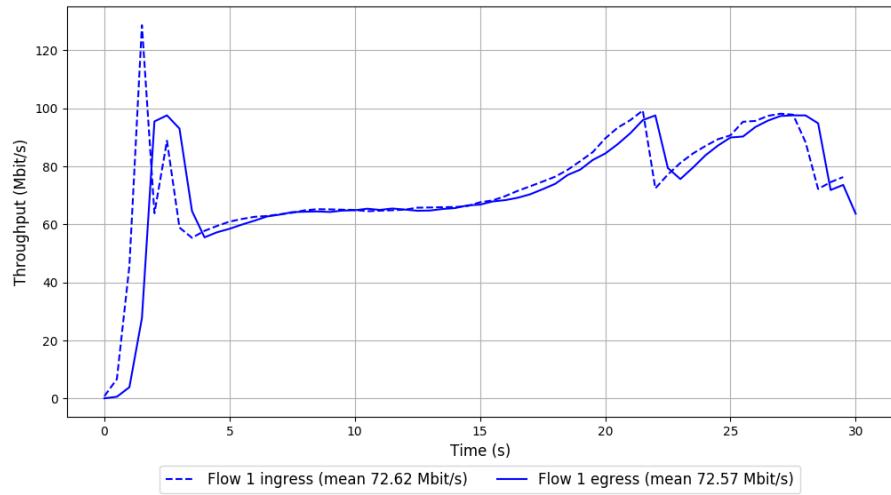


Run 2: Statistics of TCP Cubic

```
Start at: 2018-11-15 08:23:42
End at: 2018-11-15 08:24:12
Local clock offset: -6.453 ms
Remote clock offset: -2.195 ms

# Below is generated by plot.py at 2018-11-15 09:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.57 Mbit/s
95th percentile per-packet one-way delay: 105.290 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 72.57 Mbit/s
95th percentile per-packet one-way delay: 105.290 ms
Loss rate: 0.63%
```

Run 2: Report of TCP Cubic — Data Link

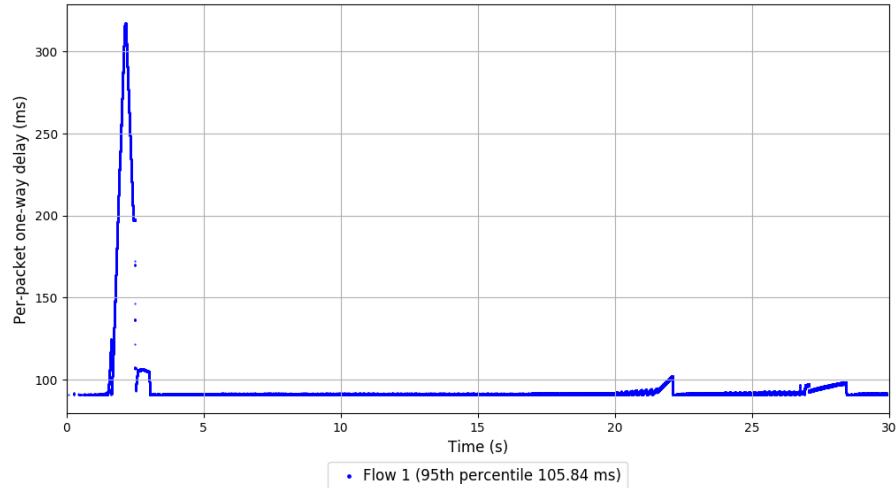
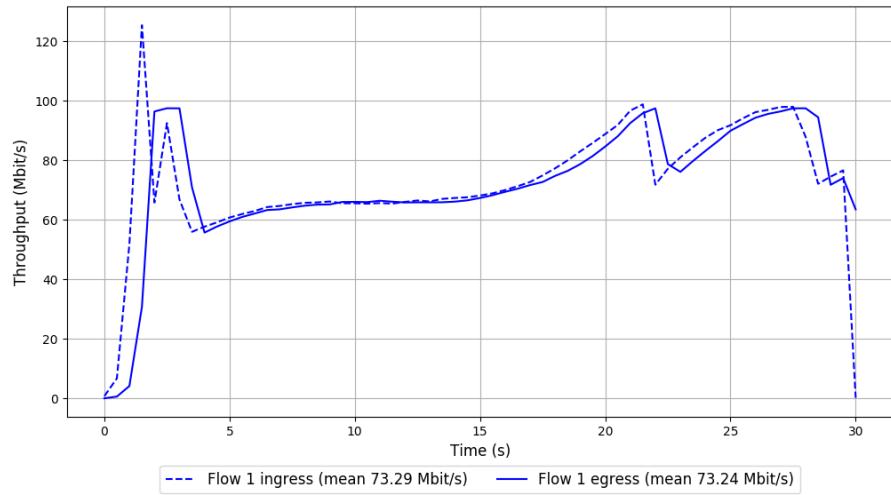


Run 3: Statistics of TCP Cubic

```
Start at: 2018-11-15 08:45:08
End at: 2018-11-15 08:45:38
Local clock offset: -2.026 ms
Remote clock offset: -3.593 ms

# Below is generated by plot.py at 2018-11-15 09:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.24 Mbit/s
95th percentile per-packet one-way delay: 105.839 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 73.24 Mbit/s
95th percentile per-packet one-way delay: 105.839 ms
Loss rate: 0.63%
```

Run 3: Report of TCP Cubic — Data Link

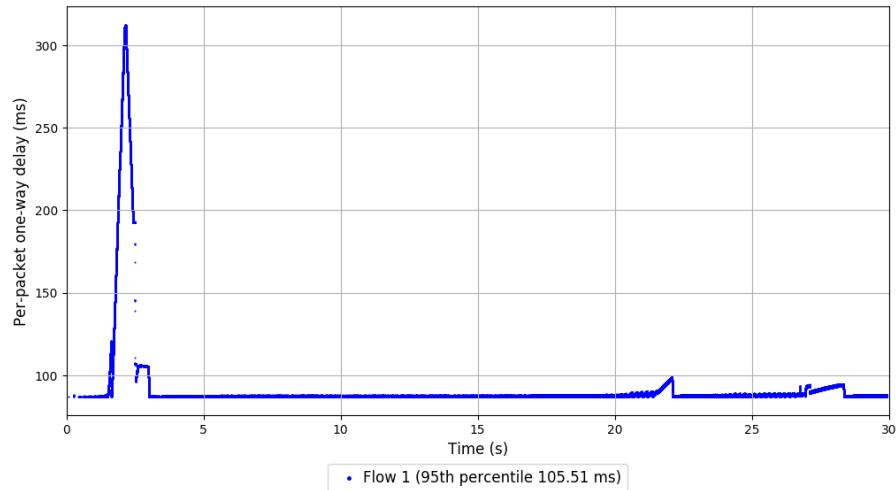
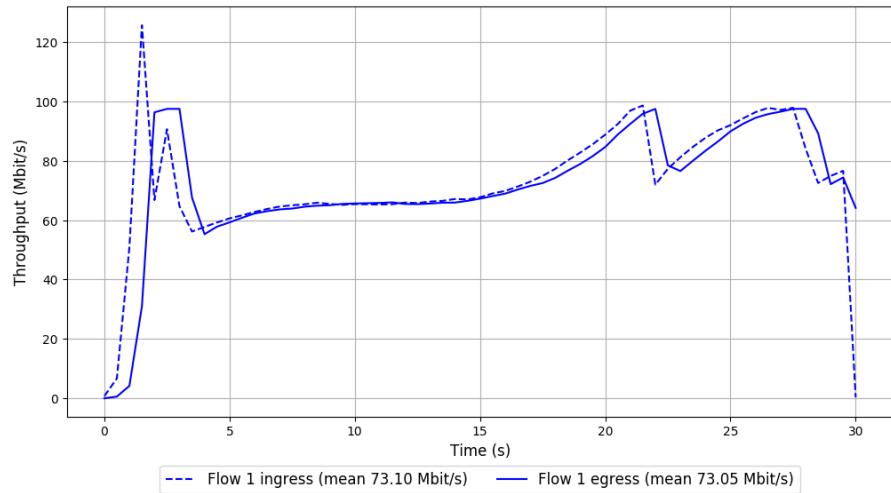


Run 4: Statistics of TCP Cubic

```
Start at: 2018-11-15 09:06:29
End at: 2018-11-15 09:06:59
Local clock offset: -5.239 ms
Remote clock offset: 0.924 ms

# Below is generated by plot.py at 2018-11-15 09:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.05 Mbit/s
95th percentile per-packet one-way delay: 105.511 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 73.05 Mbit/s
95th percentile per-packet one-way delay: 105.511 ms
Loss rate: 0.64%
```

Run 4: Report of TCP Cubic — Data Link

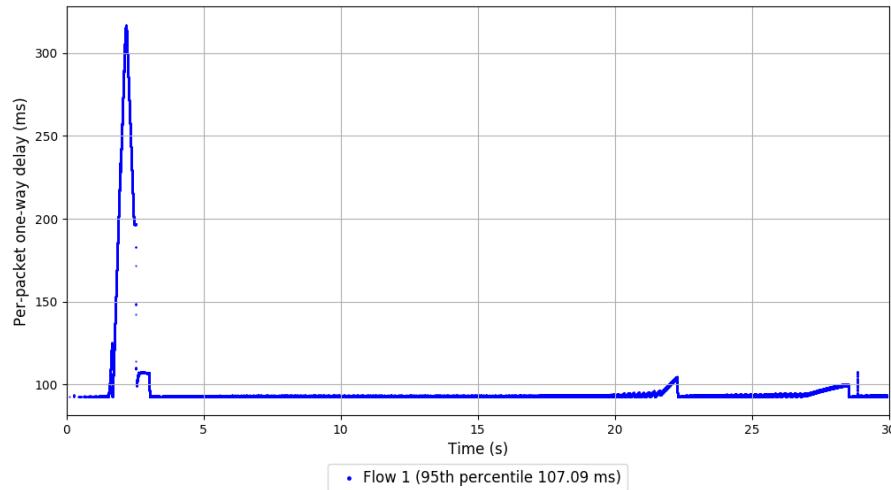
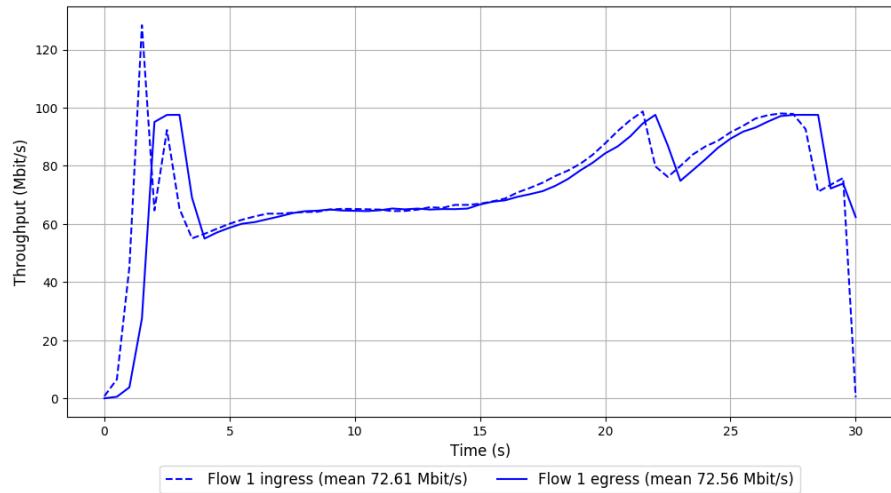


Run 5: Statistics of TCP Cubic

```
Start at: 2018-11-15 09:27:54
End at: 2018-11-15 09:28:24
Local clock offset: -6.68 ms
Remote clock offset: -4.41 ms

# Below is generated by plot.py at 2018-11-15 09:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.56 Mbit/s
95th percentile per-packet one-way delay: 107.088 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 72.56 Mbit/s
95th percentile per-packet one-way delay: 107.088 ms
Loss rate: 0.64%
```

Run 5: Report of TCP Cubic — Data Link

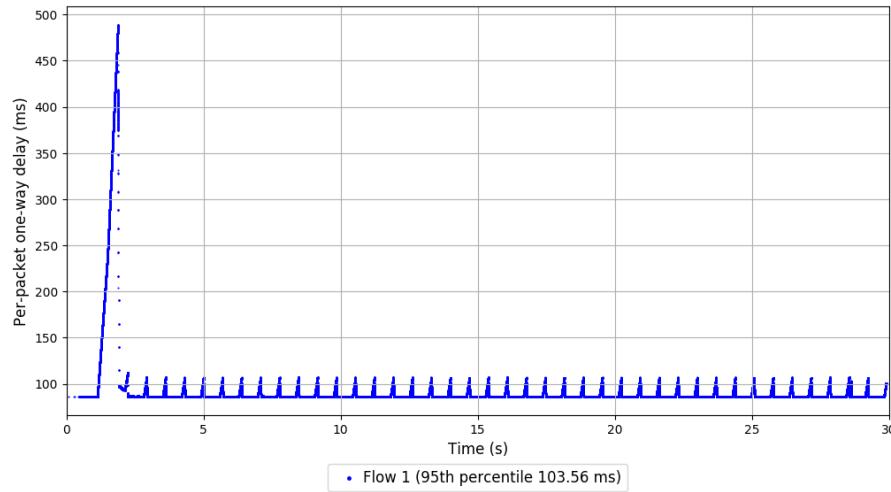
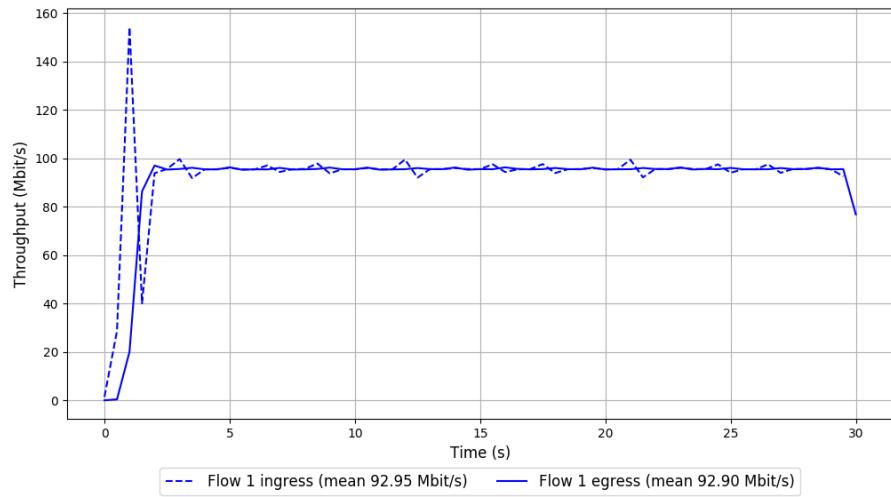


```
Run 1: Statistics of FillP

Start at: 2018-11-15 08:10:31
End at: 2018-11-15 08:11:01
Local clock offset: -6.385 ms
Remote clock offset: 4.911 ms

# Below is generated by plot.py at 2018-11-15 09:44:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.90 Mbit/s
95th percentile per-packet one-way delay: 103.563 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 92.90 Mbit/s
95th percentile per-packet one-way delay: 103.563 ms
Loss rate: 0.62%
```

Run 1: Report of FillP — Data Link

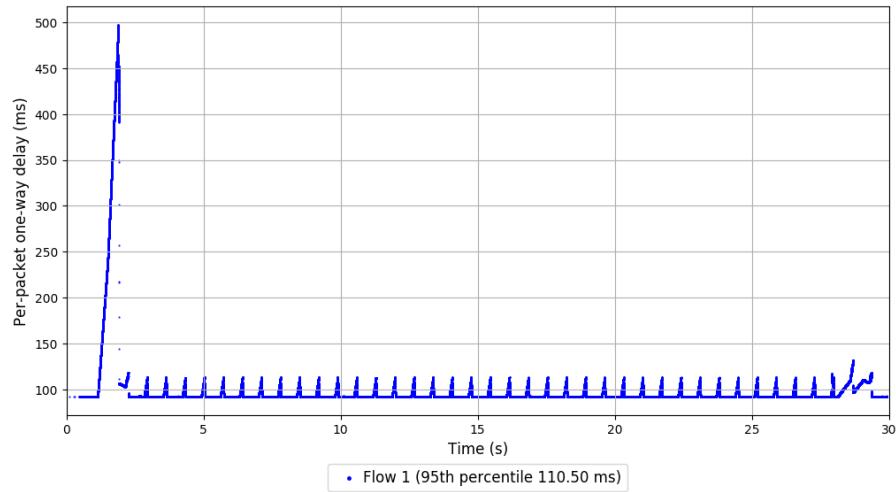
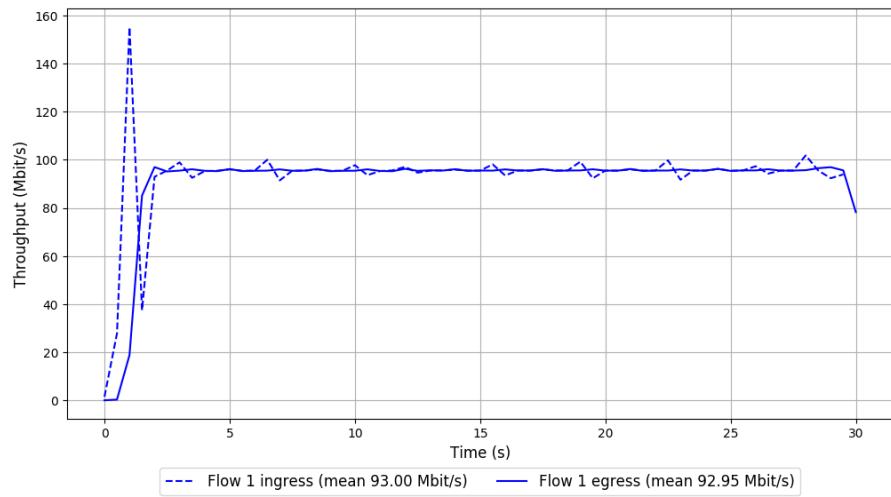


Run 2: Statistics of FillP

```
Start at: 2018-11-15 08:31:57
End at: 2018-11-15 08:32:27
Local clock offset: -4.075 ms
Remote clock offset: -2.79 ms

# Below is generated by plot.py at 2018-11-15 09:44:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 110.495 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 110.495 ms
Loss rate: 0.62%
```

Run 2: Report of FillP — Data Link

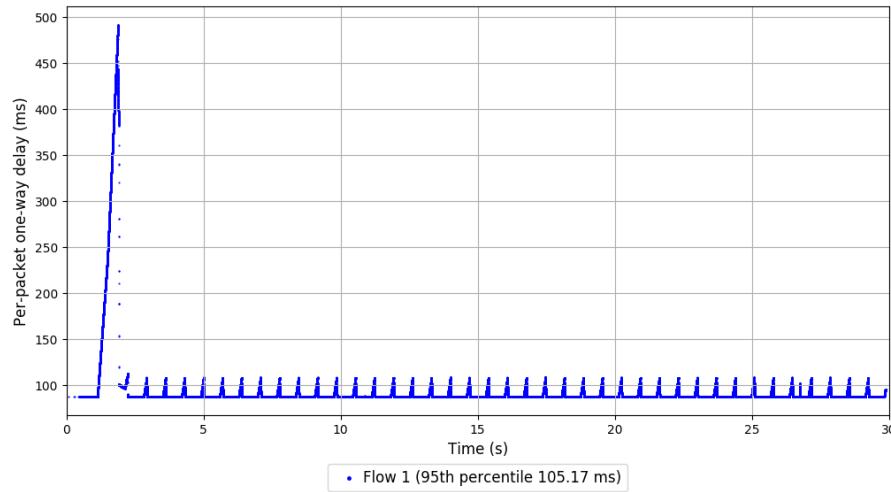
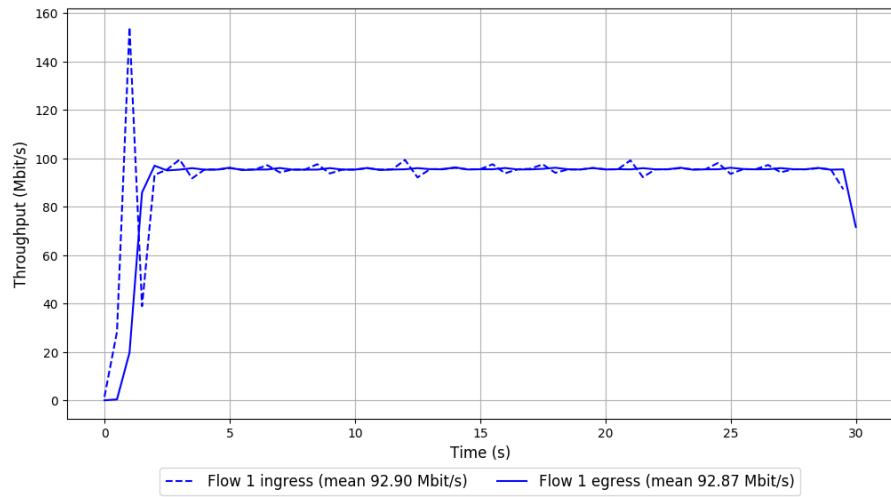


Run 3: Statistics of FillP

```
Start at: 2018-11-15 08:53:20
End at: 2018-11-15 08:53:50
Local clock offset: -0.556 ms
Remote clock offset: 1.026 ms

# Below is generated by plot.py at 2018-11-15 09:44:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.87 Mbit/s
95th percentile per-packet one-way delay: 105.167 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 92.87 Mbit/s
95th percentile per-packet one-way delay: 105.167 ms
Loss rate: 0.61%
```

Run 3: Report of FillP — Data Link

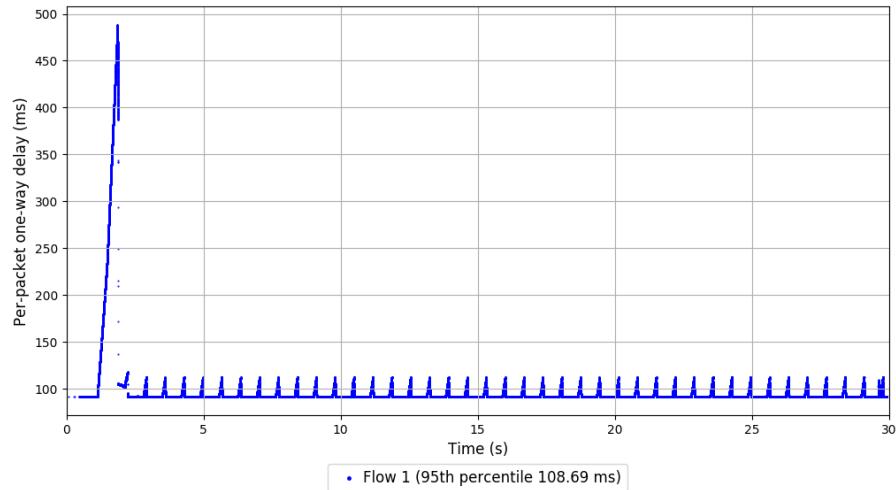
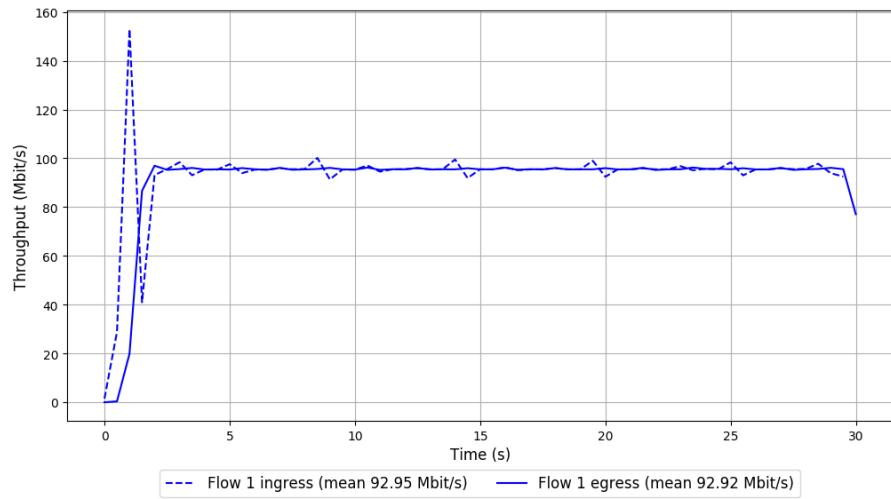


Run 4: Statistics of FillP

```
Start at: 2018-11-15 09:14:39
End at: 2018-11-15 09:15:09
Local clock offset: -6.546 ms
Remote clock offset: -3.997 ms

# Below is generated by plot.py at 2018-11-15 09:44:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.92 Mbit/s
95th percentile per-packet one-way delay: 108.686 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 92.92 Mbit/s
95th percentile per-packet one-way delay: 108.686 ms
Loss rate: 0.60%
```

Run 4: Report of FillP — Data Link

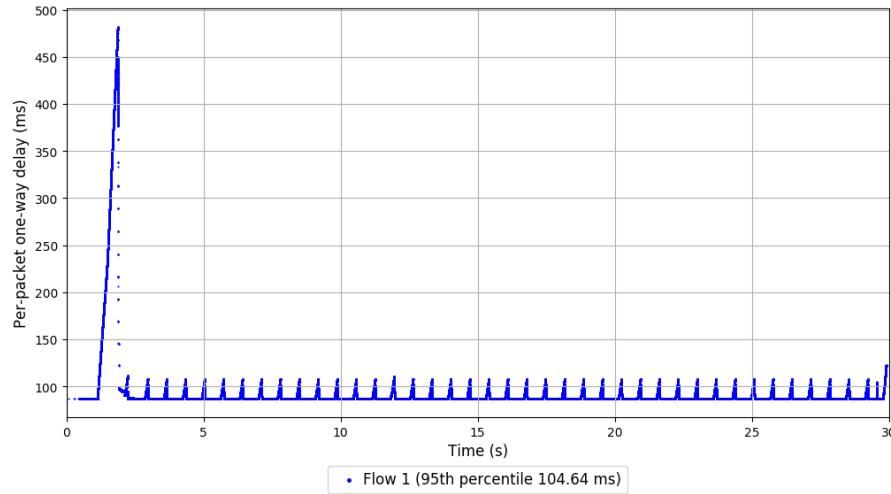
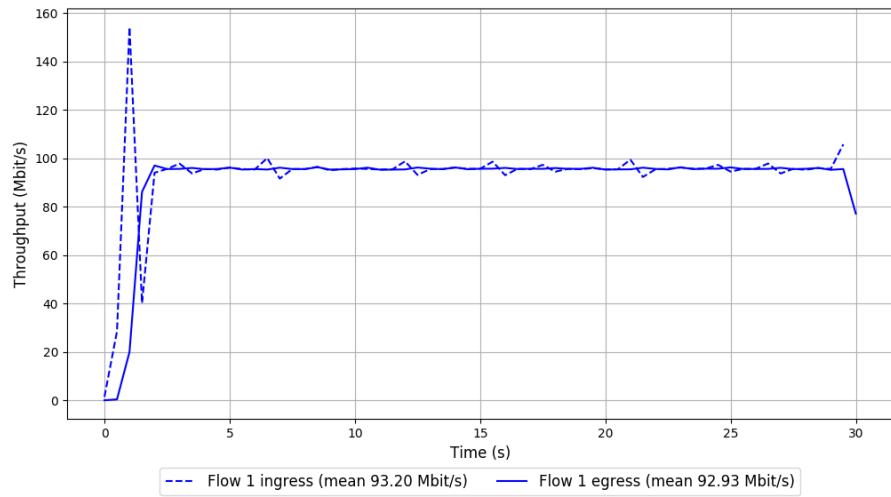


```
Run 5: Statistics of FillP
```

```
Start at: 2018-11-15 09:36:05
End at: 2018-11-15 09:36:36
Local clock offset: -6.928 ms
Remote clock offset: 0.304 ms

# Below is generated by plot.py at 2018-11-15 09:45:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.93 Mbit/s
95th percentile per-packet one-way delay: 104.639 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 92.93 Mbit/s
95th percentile per-packet one-way delay: 104.639 ms
Loss rate: 0.86%
```

Run 5: Report of FillP — Data Link

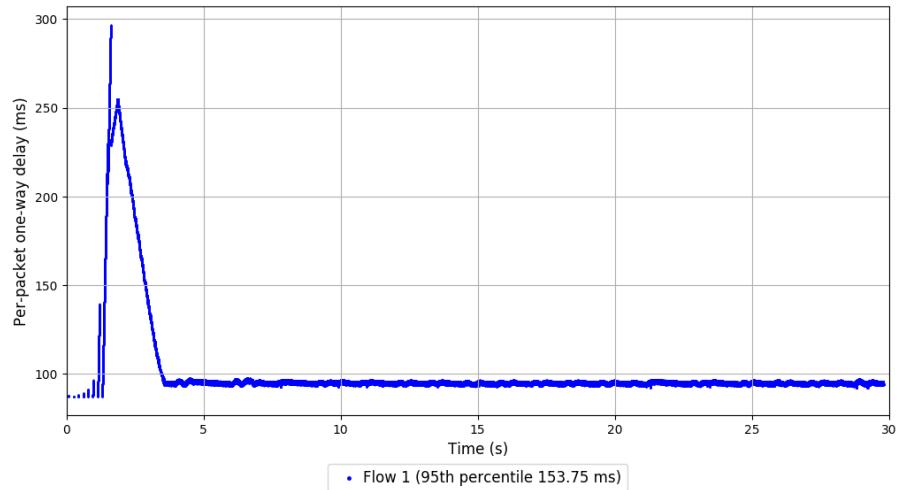
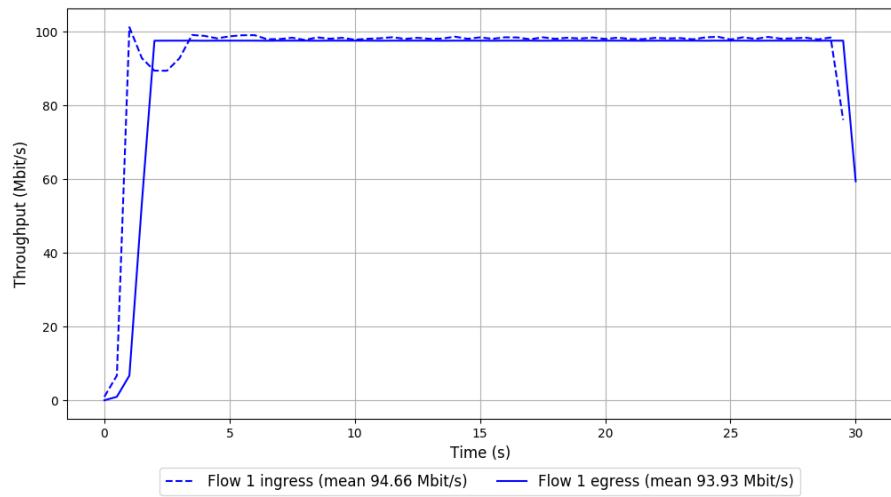


Run 1: Statistics of Indigo

```
Start at: 2018-11-15 07:53:55
End at: 2018-11-15 07:54:25
Local clock offset: -6.765 ms
Remote clock offset: 5.9 ms

# Below is generated by plot.py at 2018-11-15 09:45:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.93 Mbit/s
95th percentile per-packet one-way delay: 153.750 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 93.93 Mbit/s
95th percentile per-packet one-way delay: 153.750 ms
Loss rate: 1.34%
```

Run 1: Report of Indigo — Data Link

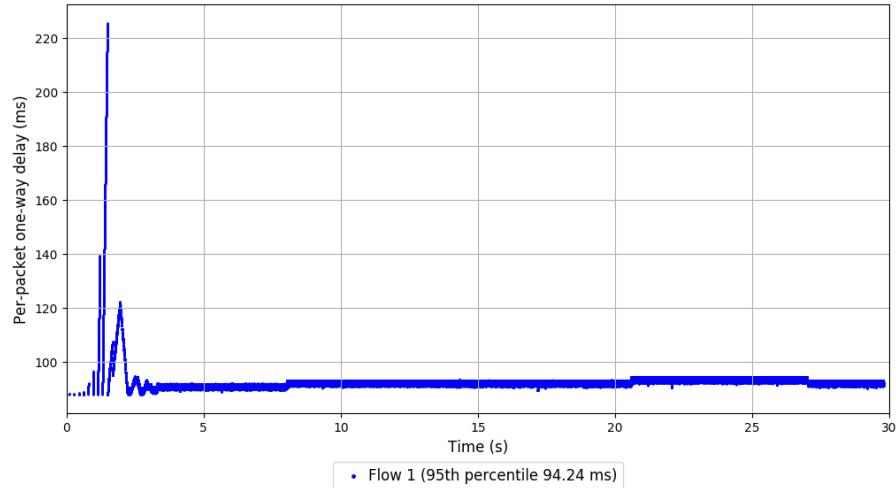
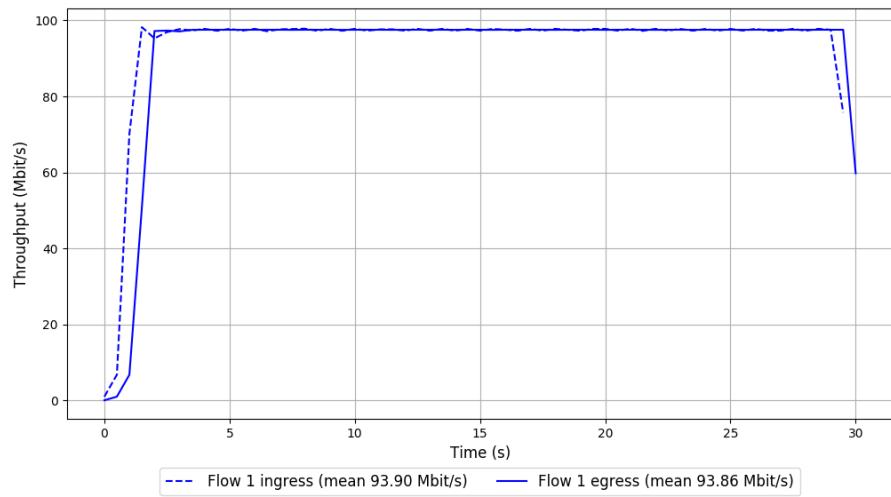


Run 2: Statistics of Indigo

```
Start at: 2018-11-15 08:15:16
End at: 2018-11-15 08:15:46
Local clock offset: -7.147 ms
Remote clock offset: 2.384 ms

# Below is generated by plot.py at 2018-11-15 09:45:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.86 Mbit/s
95th percentile per-packet one-way delay: 94.240 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 93.86 Mbit/s
95th percentile per-packet one-way delay: 94.240 ms
Loss rate: 0.61%
```

Run 2: Report of Indigo — Data Link

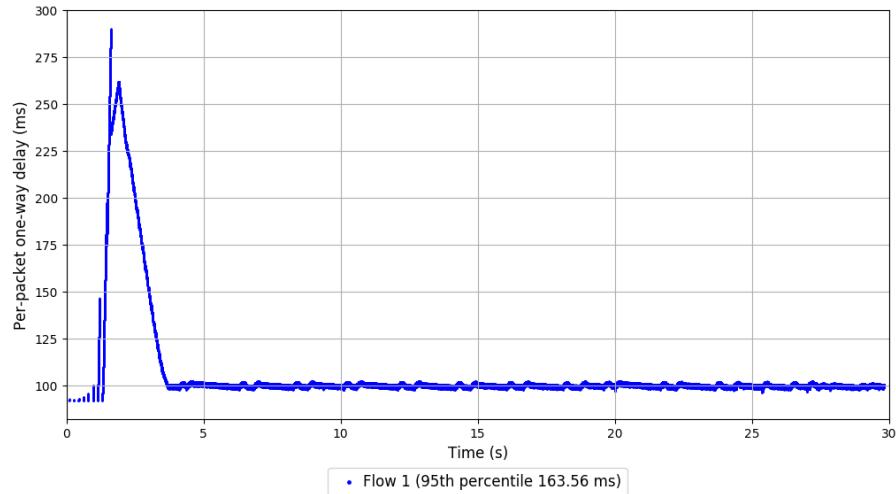
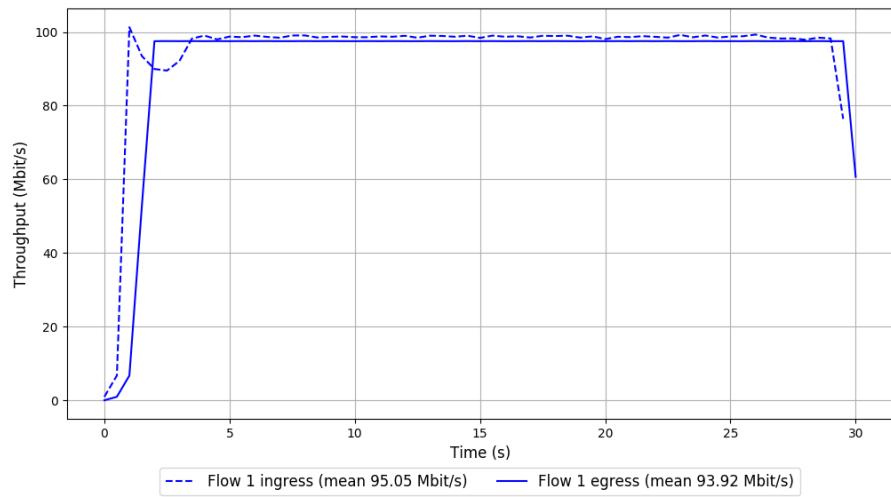


Run 3: Statistics of Indigo

```
Start at: 2018-11-15 08:36:42
End at: 2018-11-15 08:37:12
Local clock offset: -2.68 ms
Remote clock offset: -3.059 ms

# Below is generated by plot.py at 2018-11-15 09:45:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.92 Mbit/s
95th percentile per-packet one-way delay: 163.556 ms
Loss rate: 1.75%
-- Flow 1:
Average throughput: 93.92 Mbit/s
95th percentile per-packet one-way delay: 163.556 ms
Loss rate: 1.75%
```

Run 3: Report of Indigo — Data Link

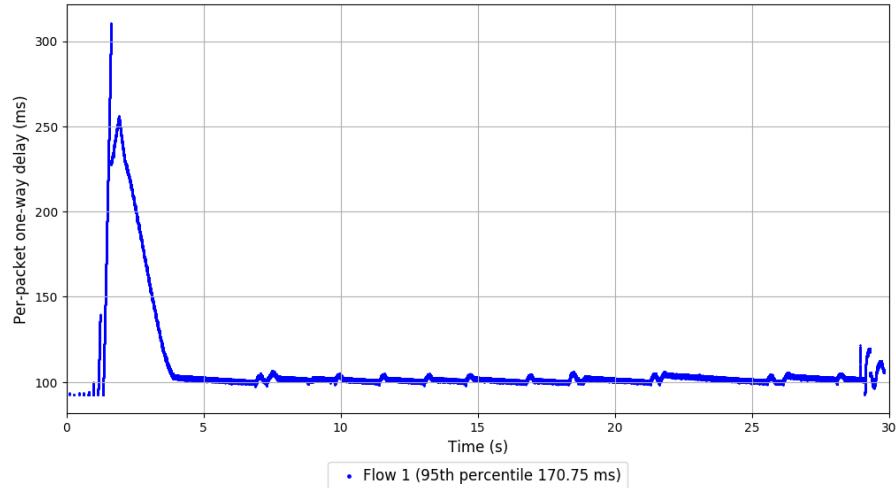
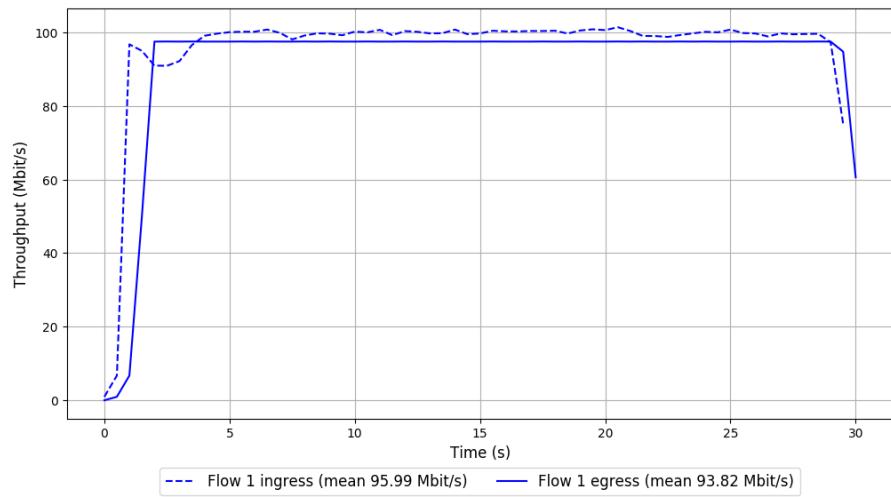


Run 4: Statistics of Indigo

```
Start at: 2018-11-15 08:58:04
End at: 2018-11-15 08:58:34
Local clock offset: -1.087 ms
Remote clock offset: -3.936 ms

# Below is generated by plot.py at 2018-11-15 09:46:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.82 Mbit/s
95th percentile per-packet one-way delay: 170.747 ms
Loss rate: 2.82%
-- Flow 1:
Average throughput: 93.82 Mbit/s
95th percentile per-packet one-way delay: 170.747 ms
Loss rate: 2.82%
```

Run 4: Report of Indigo — Data Link

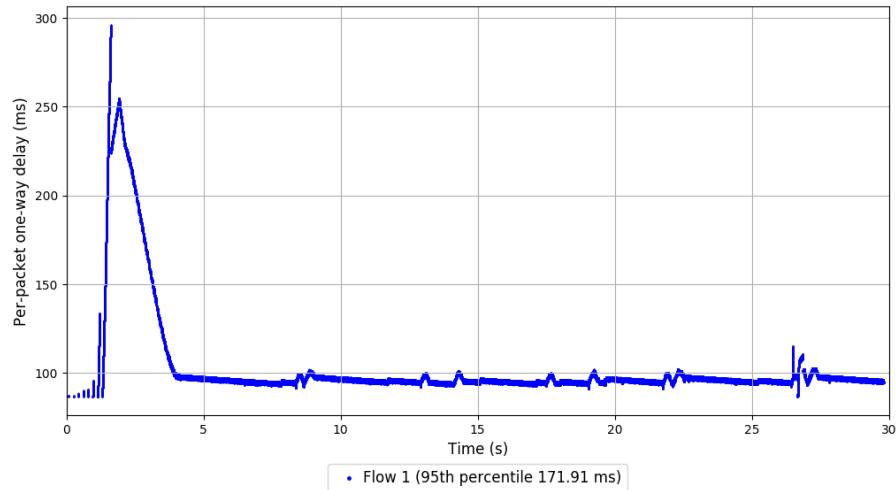
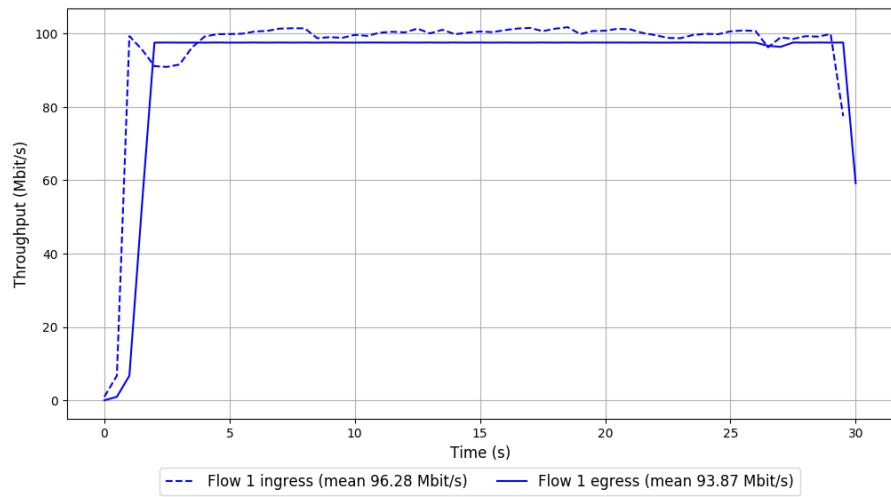


Run 5: Statistics of Indigo

```
Start at: 2018-11-15 09:19:24
End at: 2018-11-15 09:19:54
Local clock offset: -6.97 ms
Remote clock offset: 0.736 ms

# Below is generated by plot.py at 2018-11-15 09:46:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.87 Mbit/s
95th percentile per-packet one-way delay: 171.908 ms
Loss rate: 3.06%
-- Flow 1:
Average throughput: 93.87 Mbit/s
95th percentile per-packet one-way delay: 171.908 ms
Loss rate: 3.06%
```

Run 5: Report of Indigo — Data Link

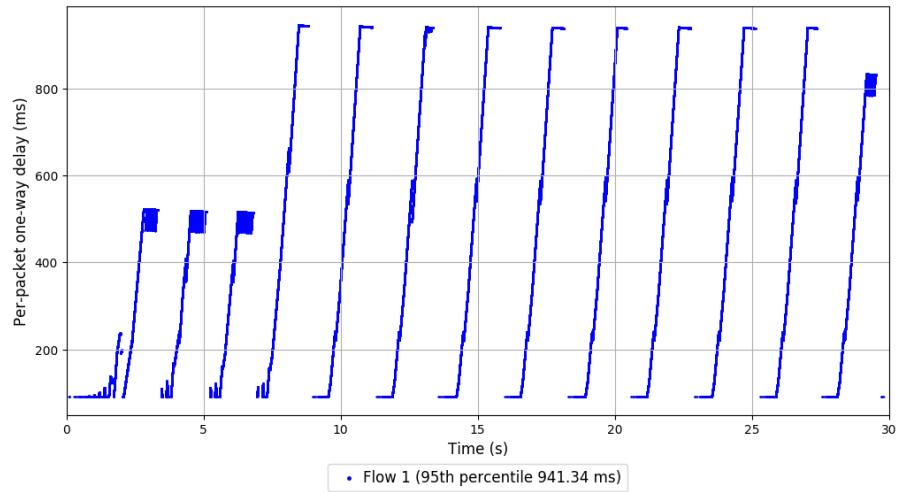
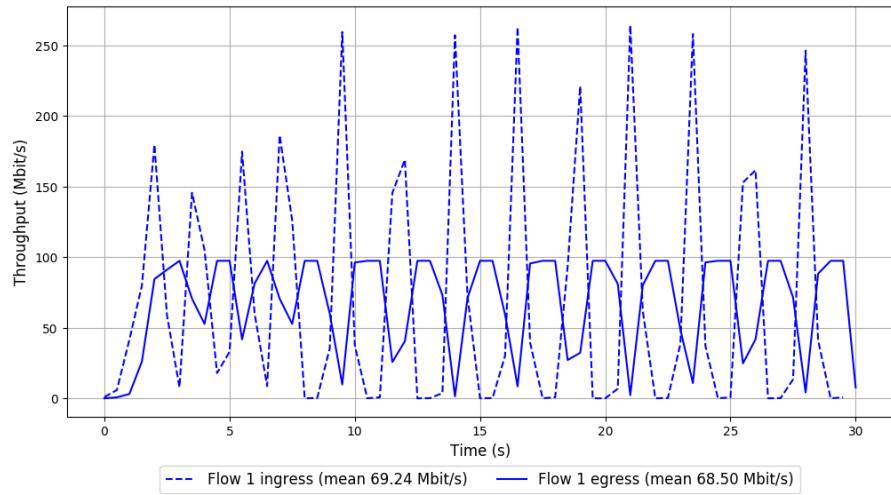


```
Run 1: Statistics of Indigo-96d2da3
```

```
Start at: 2018-11-15 08:05:48
End at: 2018-11-15 08:06:18
Local clock offset: -6.499 ms
Remote clock offset: 0.61 ms

# Below is generated by plot.py at 2018-11-15 09:46:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.50 Mbit/s
95th percentile per-packet one-way delay: 941.335 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 68.50 Mbit/s
95th percentile per-packet one-way delay: 941.335 ms
Loss rate: 1.79%
```

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

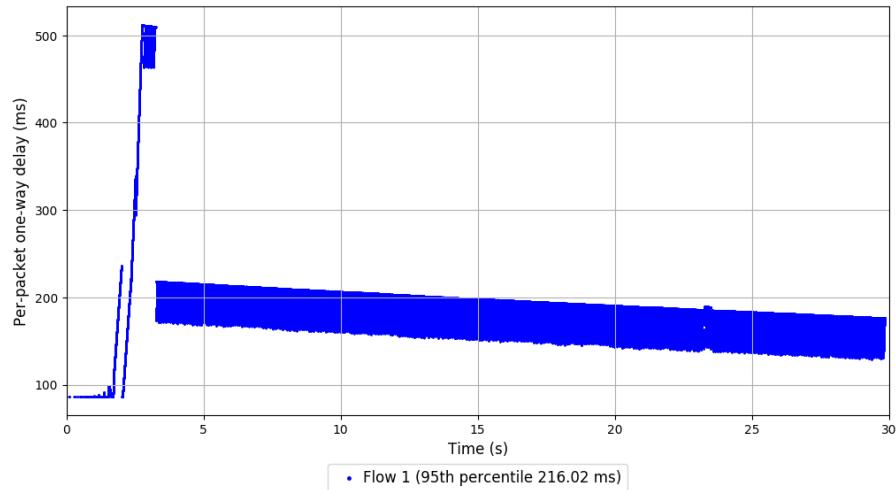
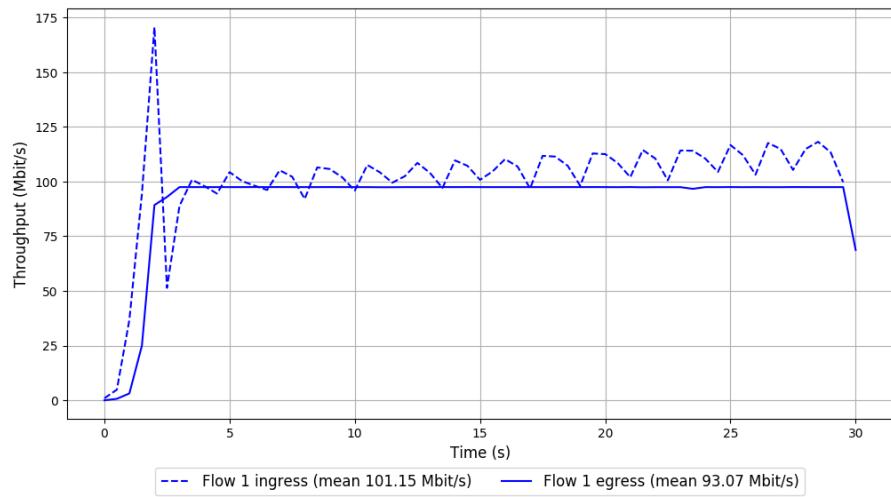


```
Run 2: Statistics of Indigo-96d2da3
```

```
Start at: 2018-11-15 08:27:13
End at: 2018-11-15 08:27:43
Local clock offset: -6.244 ms
Remote clock offset: 3.622 ms

# Below is generated by plot.py at 2018-11-15 09:46:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.07 Mbit/s
95th percentile per-packet one-way delay: 216.024 ms
Loss rate: 8.51%
-- Flow 1:
Average throughput: 93.07 Mbit/s
95th percentile per-packet one-way delay: 216.024 ms
Loss rate: 8.51%
```

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

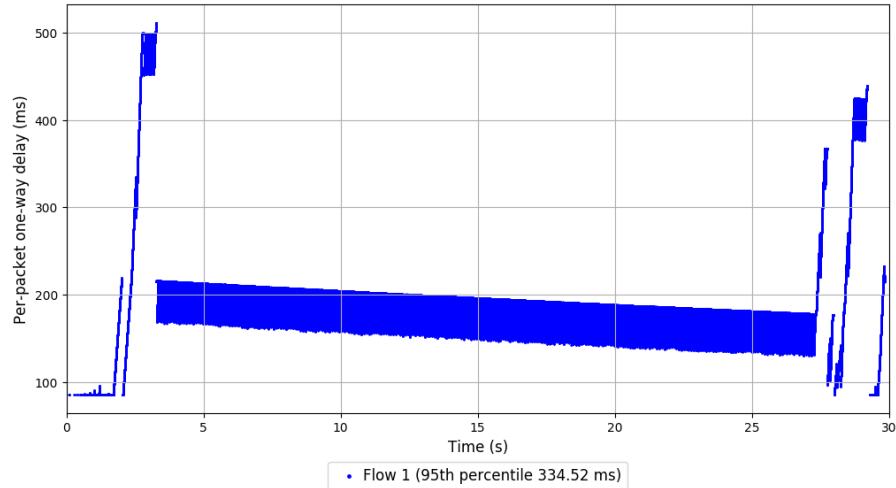
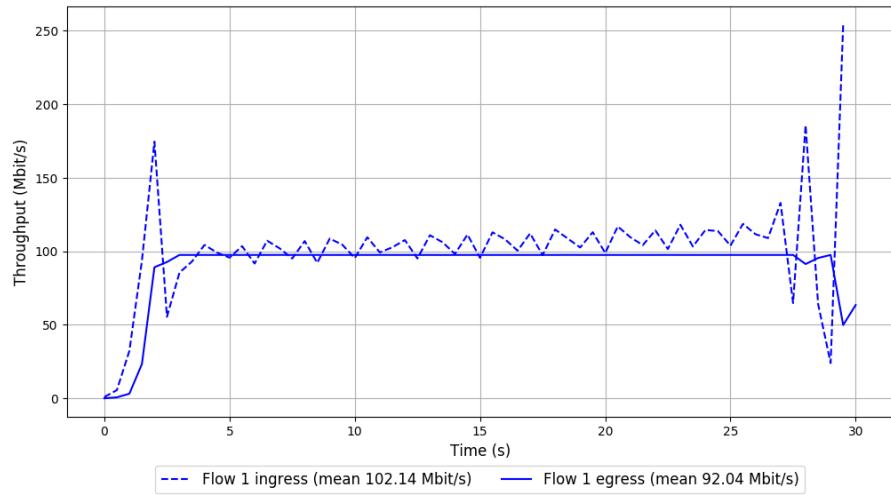


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 08:48:35
End at: 2018-11-15 08:49:05
Local clock offset: -1.751 ms
Remote clock offset: 2.271 ms

# Below is generated by plot.py at 2018-11-15 09:46:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.04 Mbit/s
95th percentile per-packet one-way delay: 334.516 ms
Loss rate: 10.37%
-- Flow 1:
Average throughput: 92.04 Mbit/s
95th percentile per-packet one-way delay: 334.516 ms
Loss rate: 10.37%
```

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

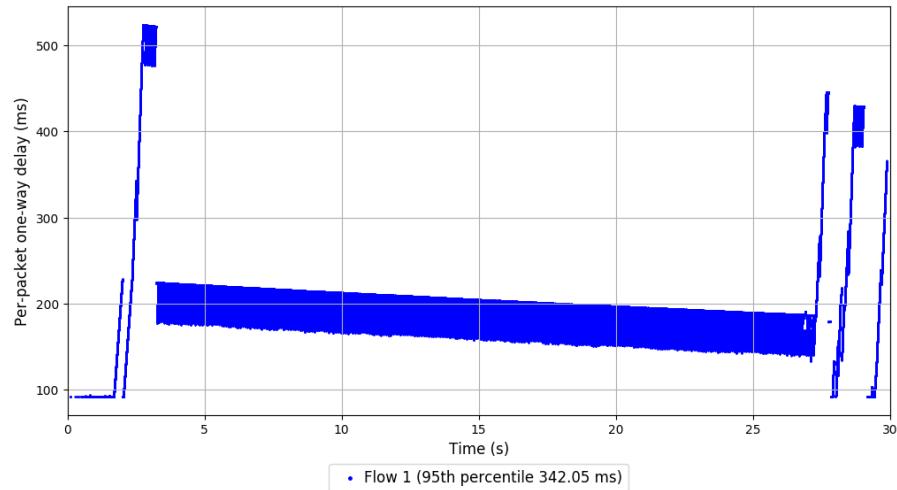
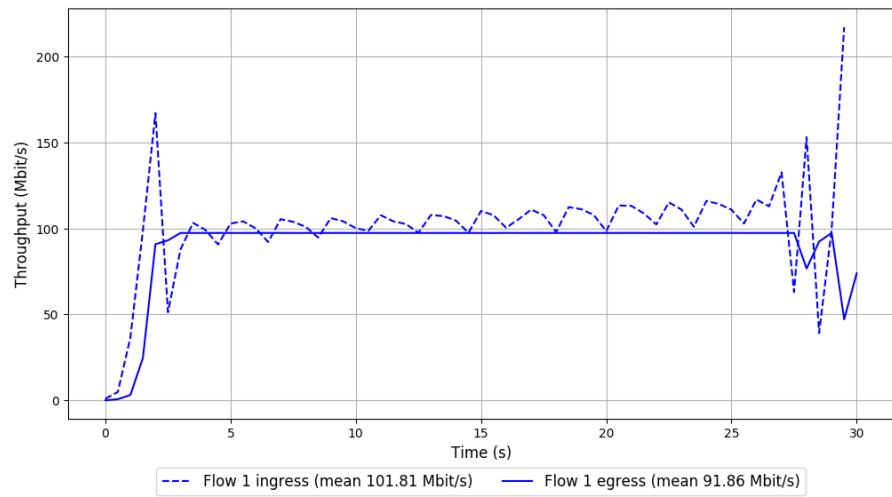


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 09:09:55
End at: 2018-11-15 09:10:25
Local clock offset: -5.081 ms
Remote clock offset: -3.993 ms

# Below is generated by plot.py at 2018-11-15 09:46:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.86 Mbit/s
95th percentile per-packet one-way delay: 342.054 ms
Loss rate: 10.28%
-- Flow 1:
Average throughput: 91.86 Mbit/s
95th percentile per-packet one-way delay: 342.054 ms
Loss rate: 10.28%
```

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

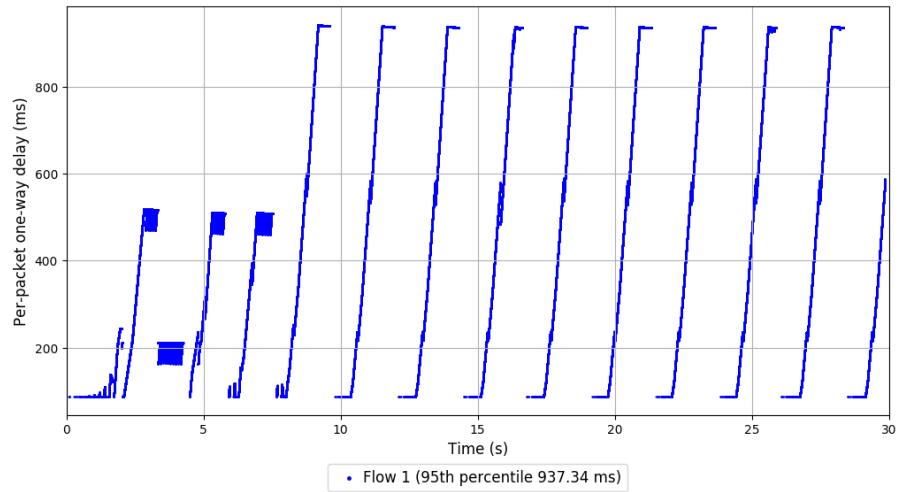
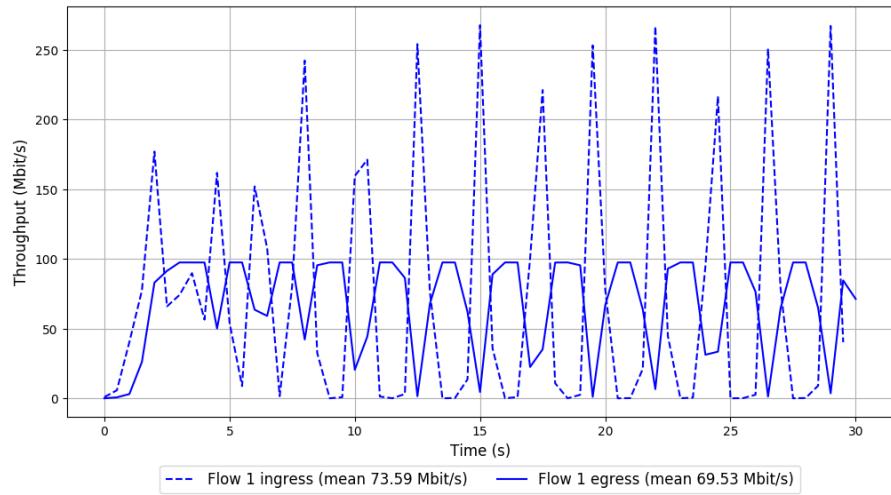


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 09:31:20
End at: 2018-11-15 09:31:50
Local clock offset: -6.865 ms
Remote clock offset: 0.259 ms

# Below is generated by plot.py at 2018-11-15 09:46:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.53 Mbit/s
95th percentile per-packet one-way delay: 937.342 ms
Loss rate: 5.27%
-- Flow 1:
Average throughput: 69.53 Mbit/s
95th percentile per-packet one-way delay: 937.342 ms
Loss rate: 5.27%
```

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

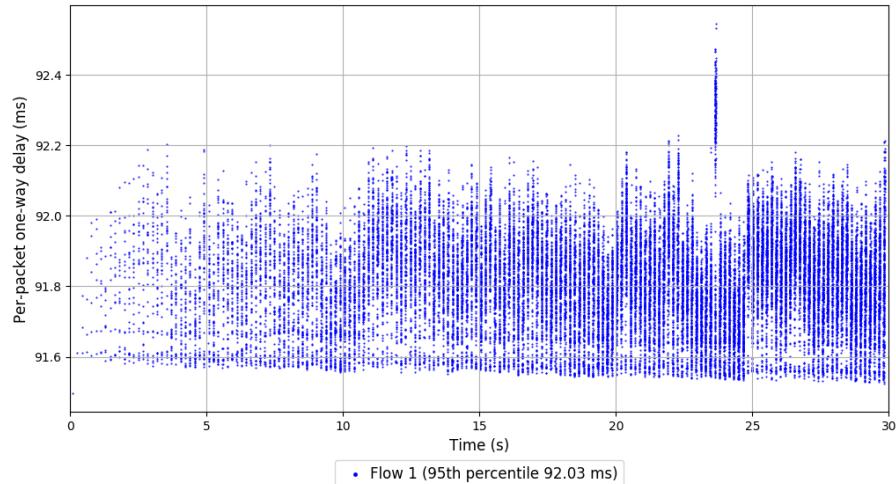
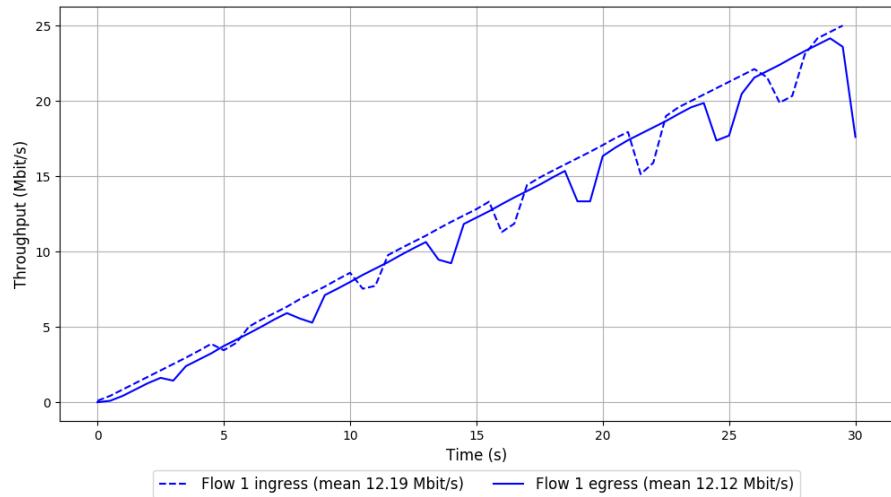


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 08:14:07
End at: 2018-11-15 08:14:37
Local clock offset: -6.389 ms
Remote clock offset: -0.161 ms

# Below is generated by plot.py at 2018-11-15 09:46:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 92.032 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 92.032 ms
Loss rate: 1.15%
```

Run 1: Report of LEDBAT — Data Link

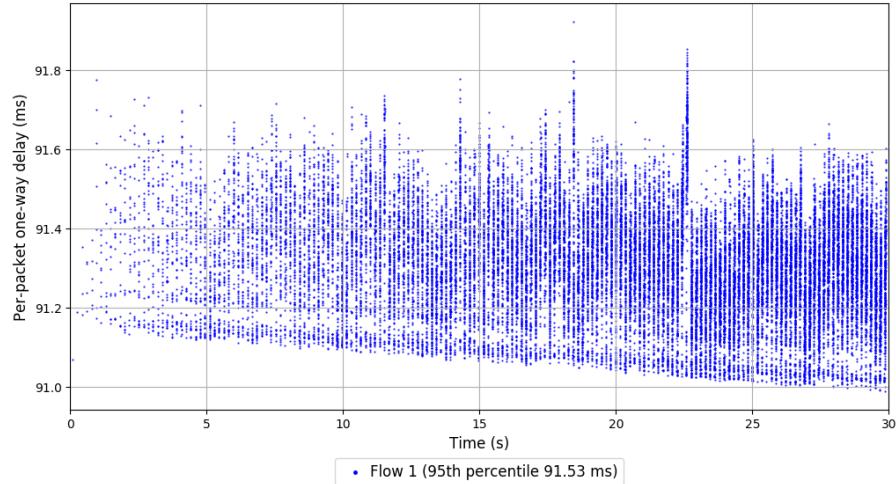
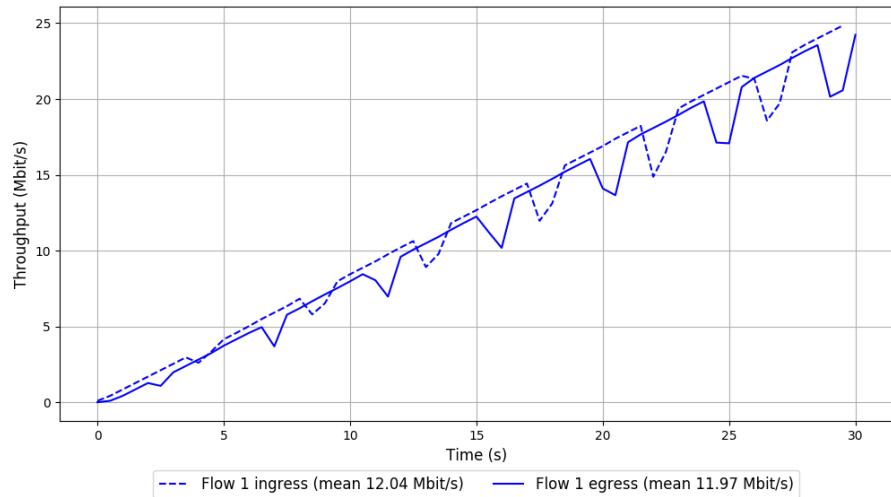


```
Run 2: Statistics of LEDBAT
```

```
Start at: 2018-11-15 08:35:33
End at: 2018-11-15 08:36:03
Local clock offset: -3.709 ms
Remote clock offset: -2.987 ms

# Below is generated by plot.py at 2018-11-15 09:46:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 91.535 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 91.535 ms
Loss rate: 1.15%
```

Run 2: Report of LEDBAT — Data Link

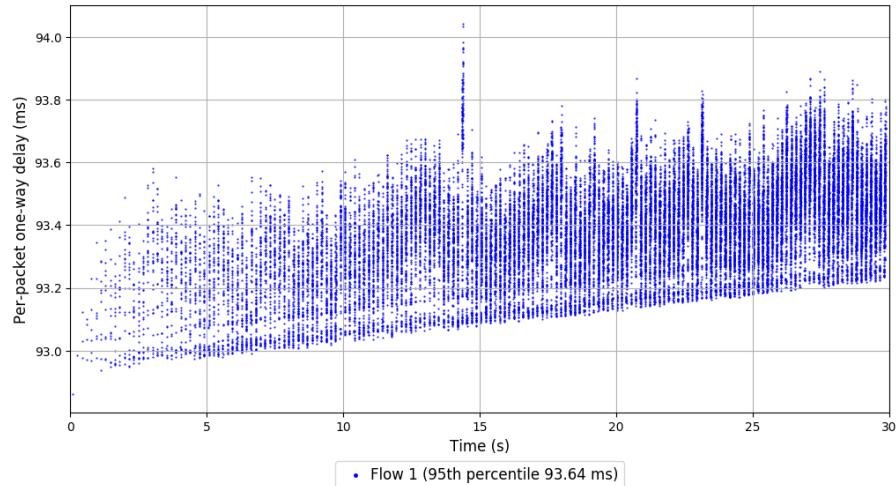
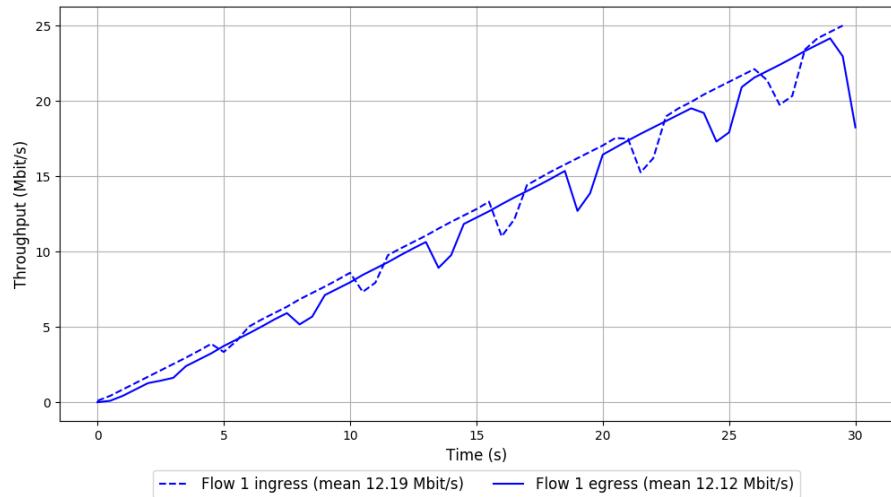


Run 3: Statistics of LEDBAT

```
Start at: 2018-11-15 08:56:55
End at: 2018-11-15 08:57:25
Local clock offset: -0.411 ms
Remote clock offset: -3.739 ms

# Below is generated by plot.py at 2018-11-15 09:46:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 93.638 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 93.638 ms
Loss rate: 1.15%
```

Run 3: Report of LEDBAT — Data Link

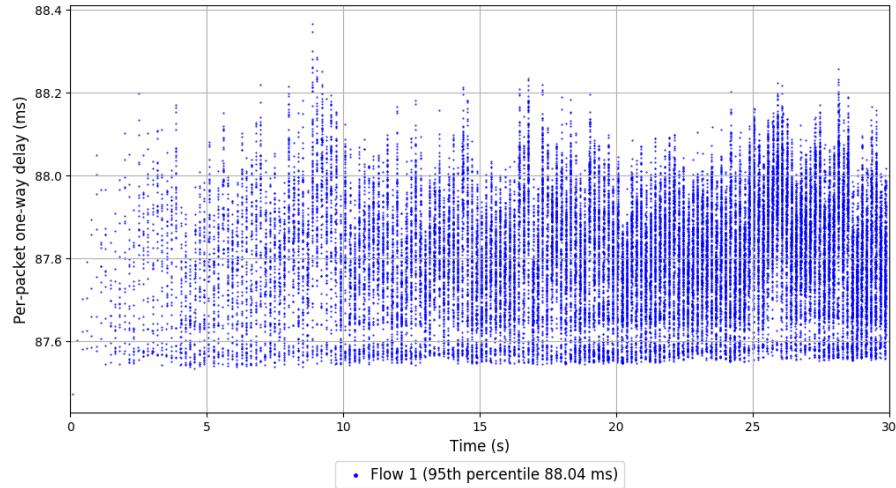
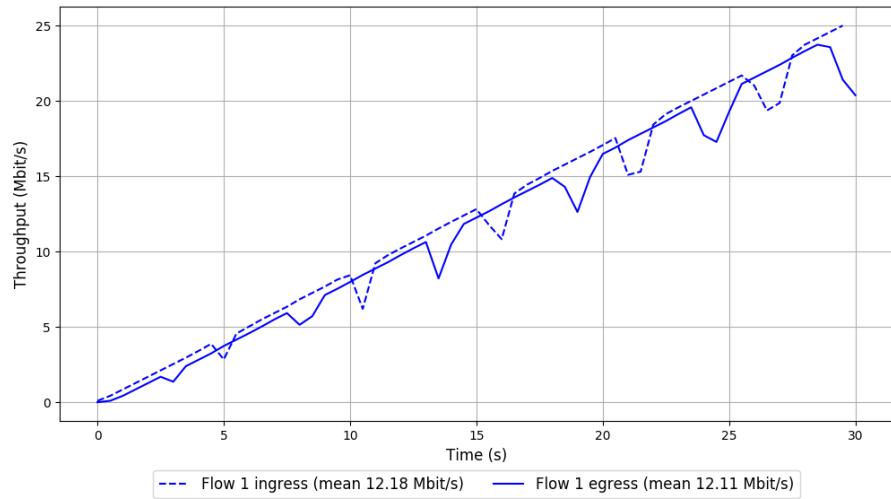


Run 4: Statistics of LEDBAT

```
Start at: 2018-11-15 09:18:15
End at: 2018-11-15 09:18:45
Local clock offset: -6.142 ms
Remote clock offset: 0.805 ms

# Below is generated by plot.py at 2018-11-15 09:46:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.11 Mbit/s
95th percentile per-packet one-way delay: 88.039 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 12.11 Mbit/s
95th percentile per-packet one-way delay: 88.039 ms
Loss rate: 1.15%
```

Run 4: Report of LEDBAT — Data Link

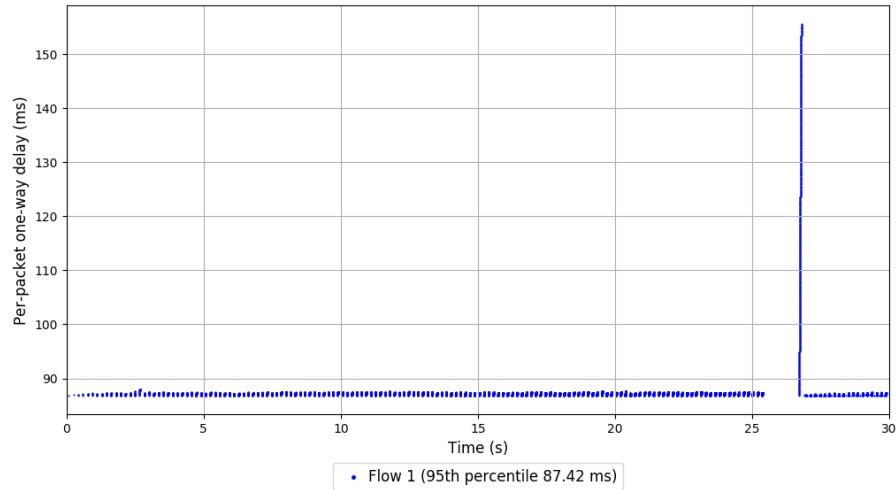
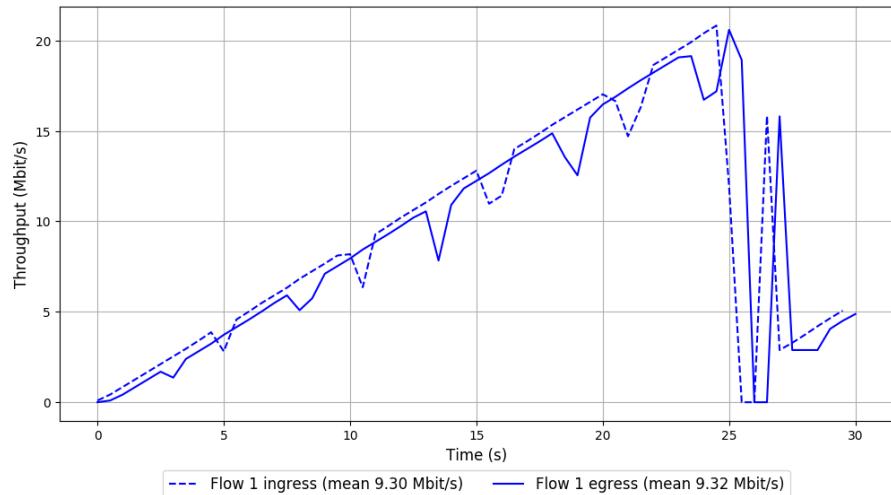


Run 5: Statistics of LEDBAT

```
Start at: 2018-11-15 09:39:41
End at: 2018-11-15 09:40:11
Local clock offset: -7.041 ms
Remote clock offset: 1.104 ms

# Below is generated by plot.py at 2018-11-15 09:46:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.32 Mbit/s
95th percentile per-packet one-way delay: 87.416 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 9.32 Mbit/s
95th percentile per-packet one-way delay: 87.416 ms
Loss rate: 0.31%
```

Run 5: Report of LEDBAT — Data Link

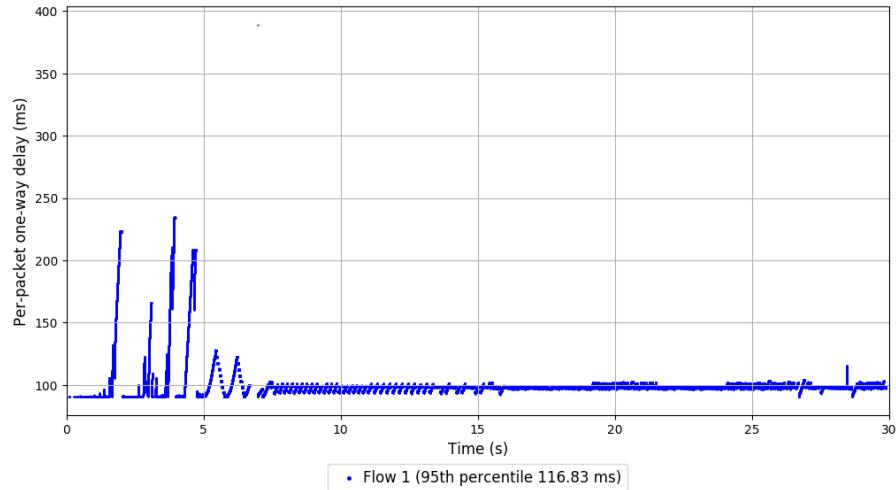
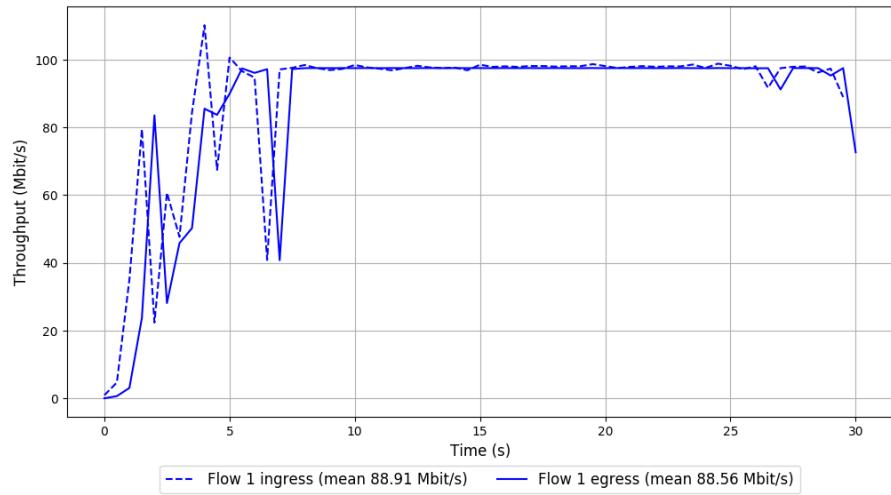


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-11-15 07:59:56
End at: 2018-11-15 08:00:26
Local clock offset: -7.397 ms
Remote clock offset: 1.423 ms

# Below is generated by plot.py at 2018-11-15 09:47:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.56 Mbit/s
95th percentile per-packet one-way delay: 116.832 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 88.56 Mbit/s
95th percentile per-packet one-way delay: 116.832 ms
Loss rate: 0.97%
```

Run 1: Report of Indigo-Muses — Data Link

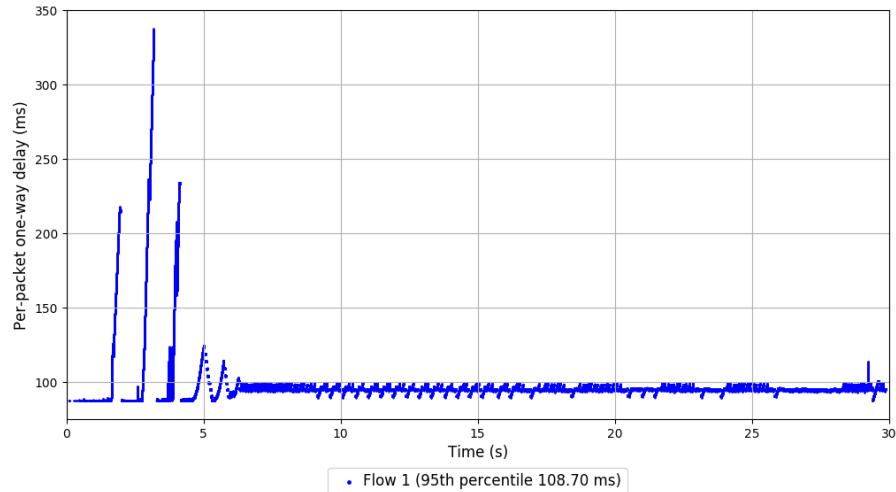
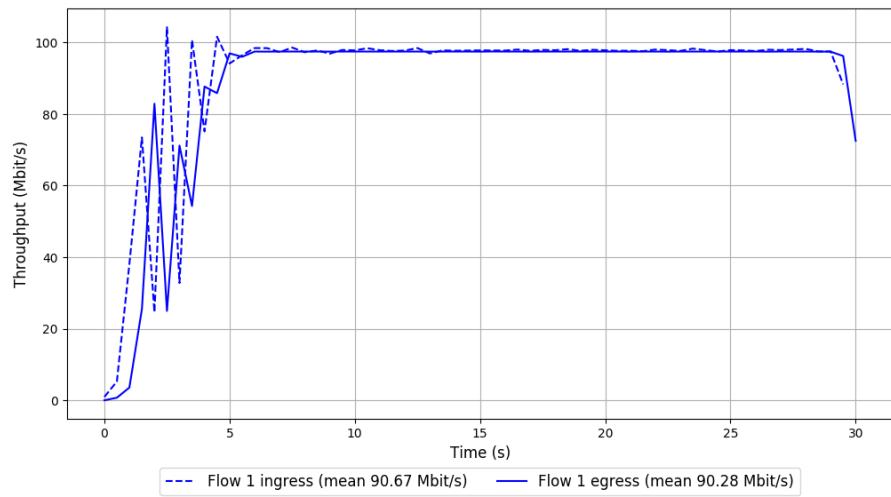


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-11-15 08:21:16
End at: 2018-11-15 08:21:46
Local clock offset: -6.42 ms
Remote clock offset: 2.993 ms

# Below is generated by plot.py at 2018-11-15 09:47:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.28 Mbit/s
95th percentile per-packet one-way delay: 108.696 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 90.28 Mbit/s
95th percentile per-packet one-way delay: 108.696 ms
Loss rate: 1.00%
```

Run 2: Report of Indigo-Muses — Data Link

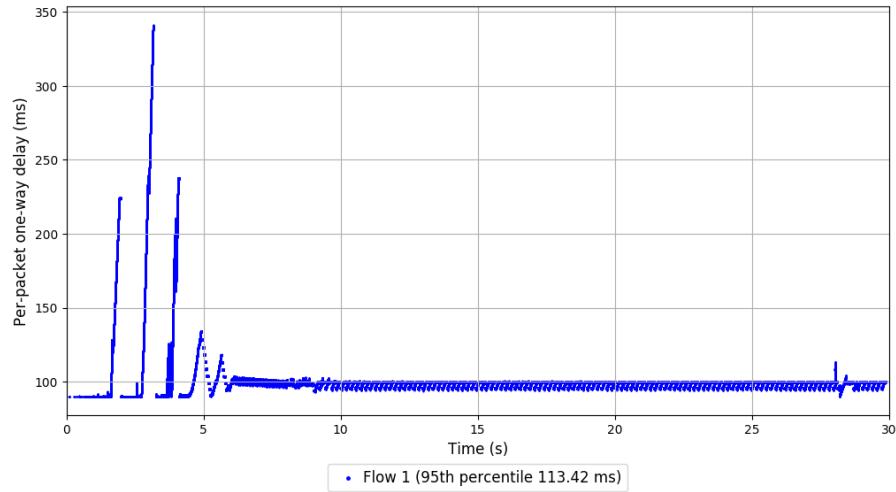
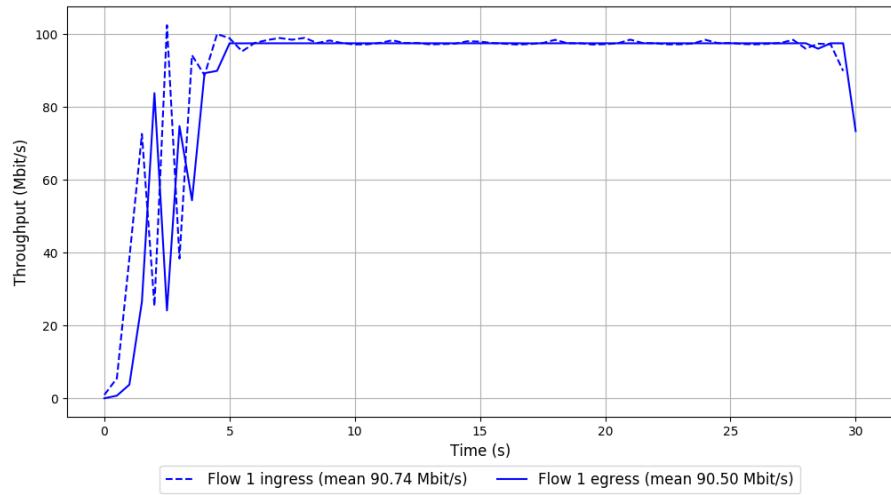


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-11-15 08:42:43
End at: 2018-11-15 08:43:13
Local clock offset: -2.411 ms
Remote clock offset: -2.405 ms

# Below is generated by plot.py at 2018-11-15 09:47:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.50 Mbit/s
95th percentile per-packet one-way delay: 113.420 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 90.50 Mbit/s
95th percentile per-packet one-way delay: 113.420 ms
Loss rate: 0.84%
```

Run 3: Report of Indigo-Muses — Data Link

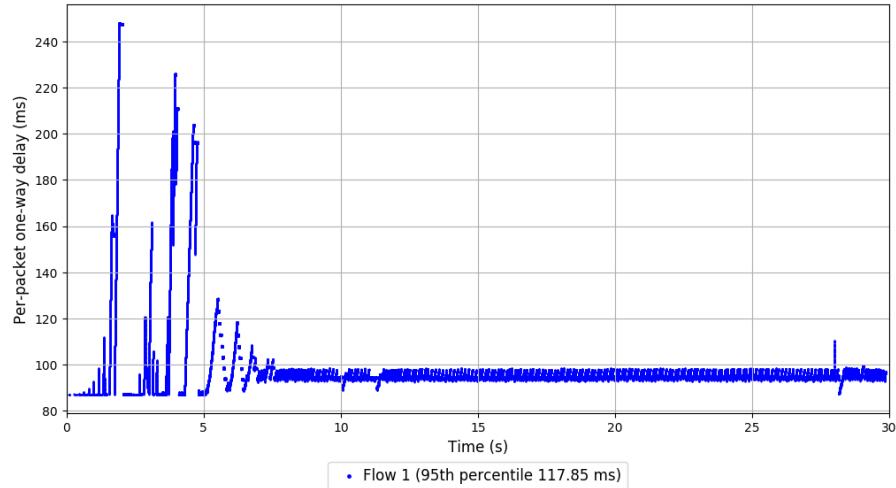
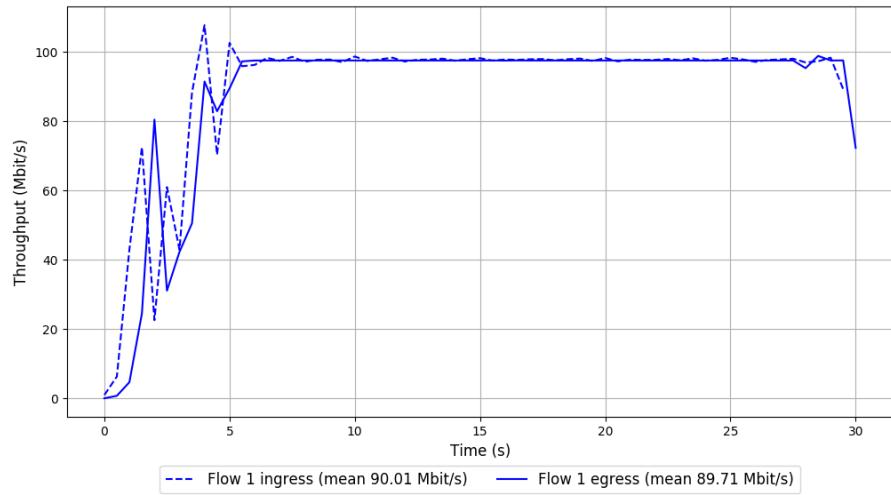


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-11-15 09:04:04
End at: 2018-11-15 09:04:34
Local clock offset: -4.543 ms
Remote clock offset: 0.919 ms

# Below is generated by plot.py at 2018-11-15 09:47:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.71 Mbit/s
95th percentile per-packet one-way delay: 117.851 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 89.71 Mbit/s
95th percentile per-packet one-way delay: 117.851 ms
Loss rate: 0.91%
```

Run 4: Report of Indigo-Muses — Data Link

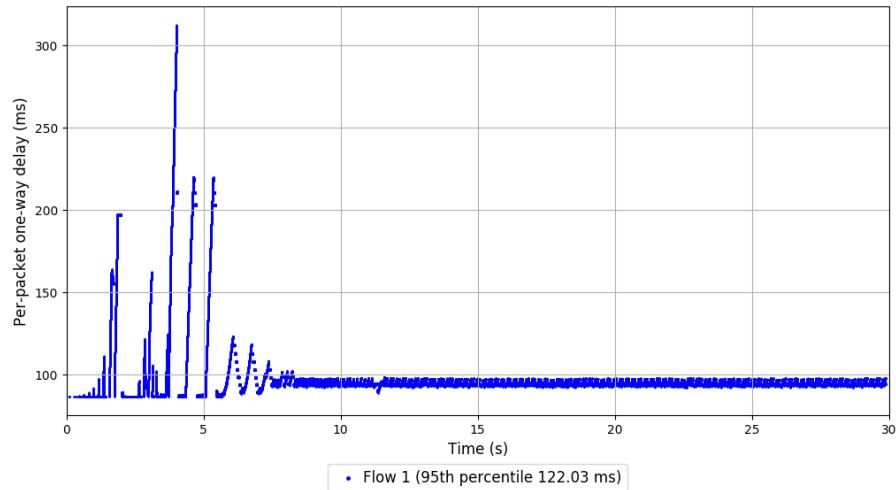
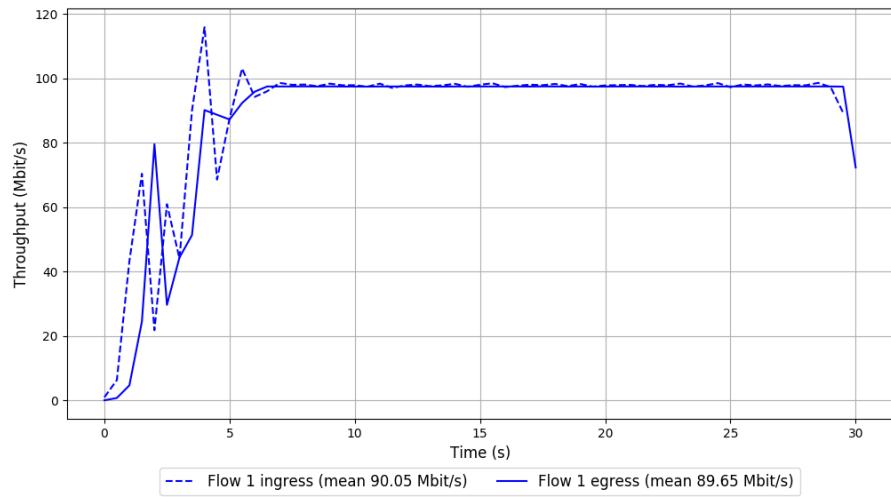


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-11-15 09:25:24
End at: 2018-11-15 09:25:54
Local clock offset: -7.348 ms
Remote clock offset: 0.592 ms

# Below is generated by plot.py at 2018-11-15 09:47:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.65 Mbit/s
95th percentile per-packet one-way delay: 122.031 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 89.65 Mbit/s
95th percentile per-packet one-way delay: 122.031 ms
Loss rate: 1.01%
```

Run 5: Report of Indigo-Muses — Data Link

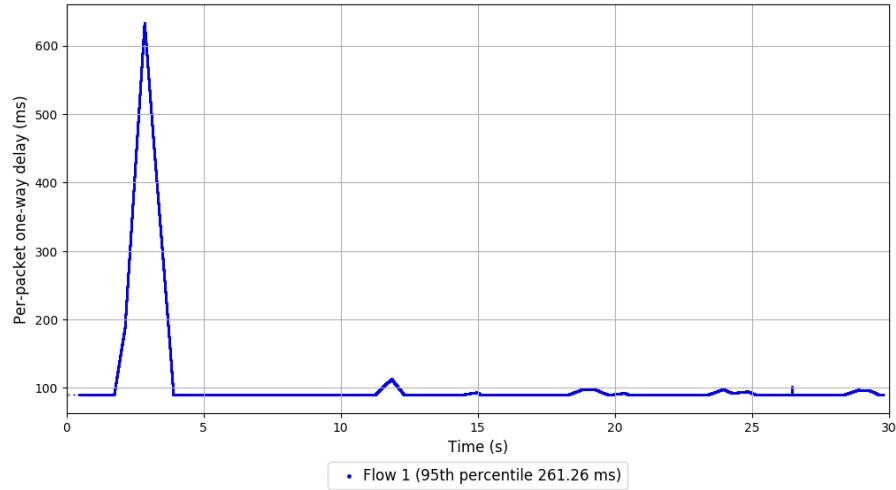
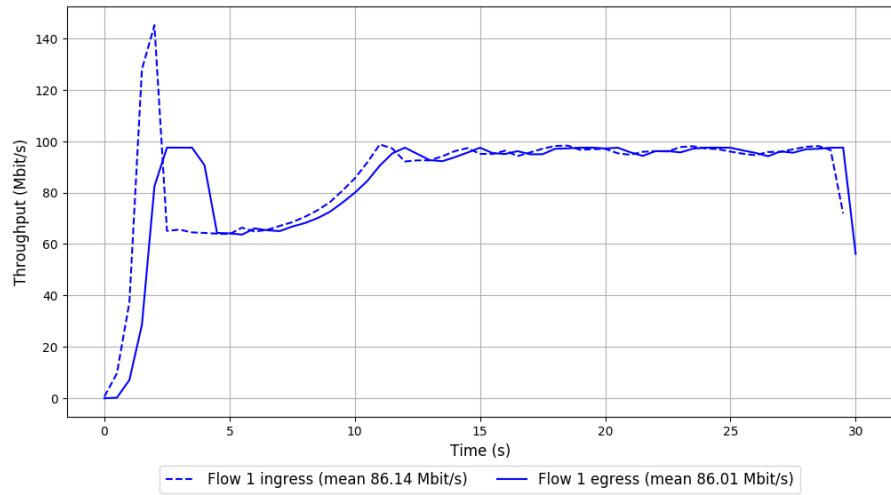


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-11-15 07:56:23
End at: 2018-11-15 07:56:53
Local clock offset: -7.593 ms
Remote clock offset: 1.796 ms

# Below is generated by plot.py at 2018-11-15 09:47:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.01 Mbit/s
95th percentile per-packet one-way delay: 261.258 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 86.01 Mbit/s
95th percentile per-packet one-way delay: 261.258 ms
Loss rate: 0.73%
```

Run 1: Report of PCC-Allegro — Data Link

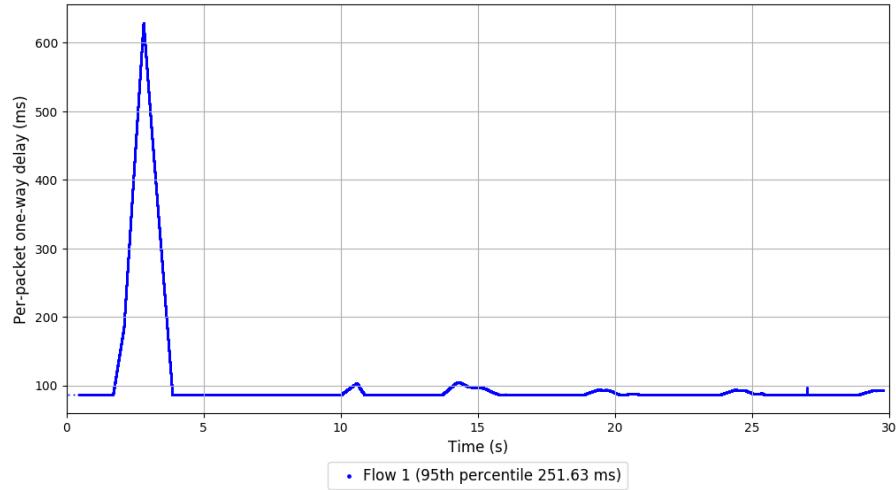
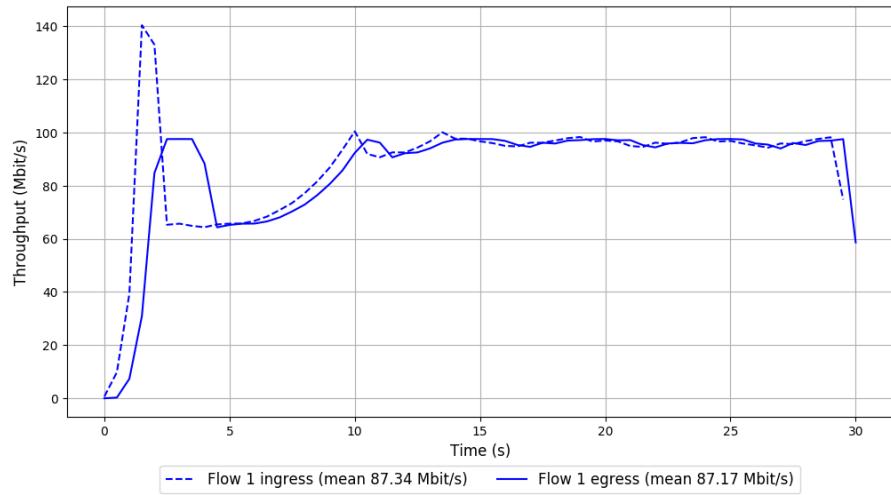


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-11-15 08:17:43
End at: 2018-11-15 08:18:13
Local clock offset: -6.402 ms
Remote clock offset: 4.402 ms

# Below is generated by plot.py at 2018-11-15 09:47:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.17 Mbit/s
95th percentile per-packet one-way delay: 251.630 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 87.17 Mbit/s
95th percentile per-packet one-way delay: 251.630 ms
Loss rate: 0.77%
```

Run 2: Report of PCC-Allegro — Data Link

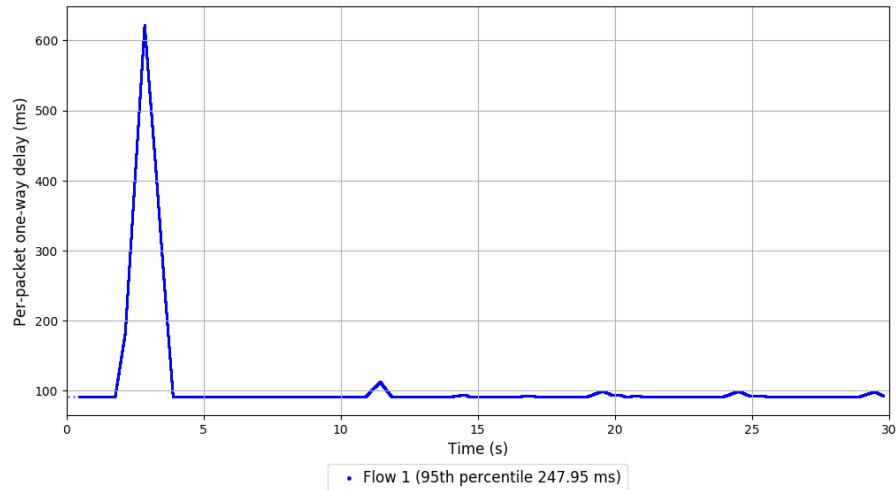
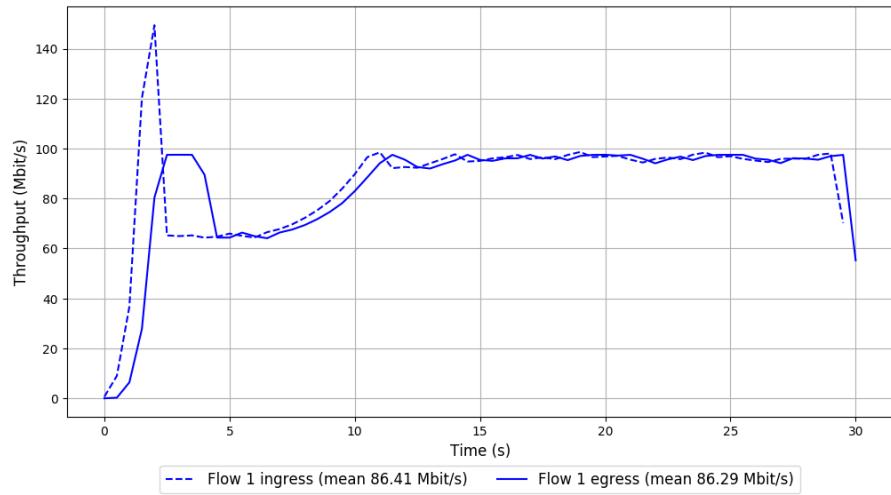


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-11-15 08:39:10
End at: 2018-11-15 08:39:40
Local clock offset: -2.181 ms
Remote clock offset: -2.213 ms

# Below is generated by plot.py at 2018-11-15 09:47:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.29 Mbit/s
95th percentile per-packet one-way delay: 247.950 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 86.29 Mbit/s
95th percentile per-packet one-way delay: 247.950 ms
Loss rate: 0.72%
```

Run 3: Report of PCC-Allegro — Data Link

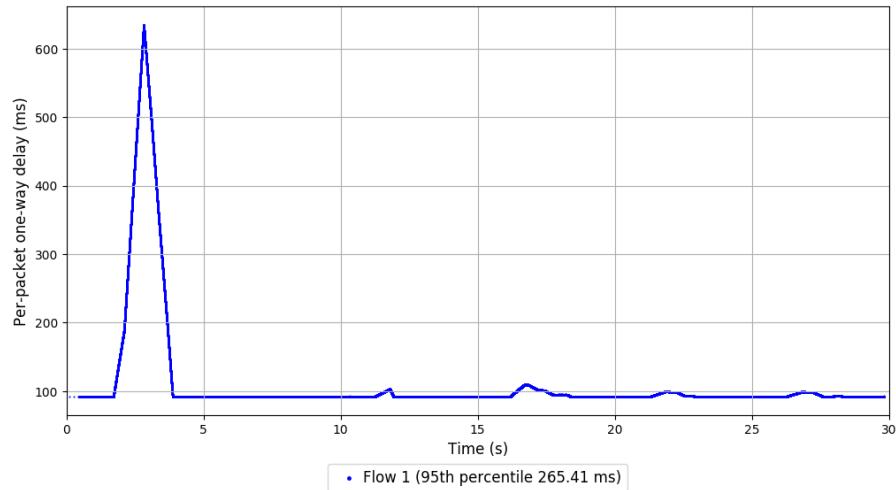
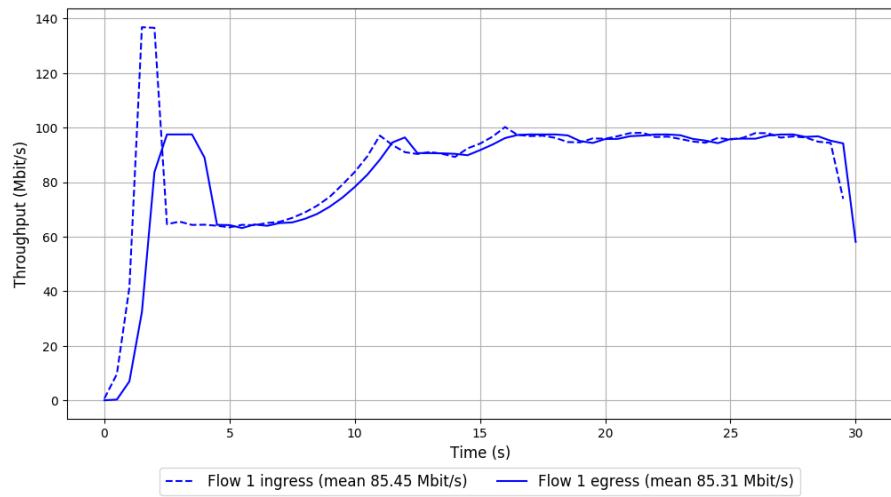


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-11-15 09:00:31
End at: 2018-11-15 09:01:01
Local clock offset: -3.163 ms
Remote clock offset: -3.877 ms

# Below is generated by plot.py at 2018-11-15 09:48:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.31 Mbit/s
95th percentile per-packet one-way delay: 265.413 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 85.31 Mbit/s
95th percentile per-packet one-way delay: 265.413 ms
Loss rate: 0.74%
```

Run 4: Report of PCC-Allegro — Data Link

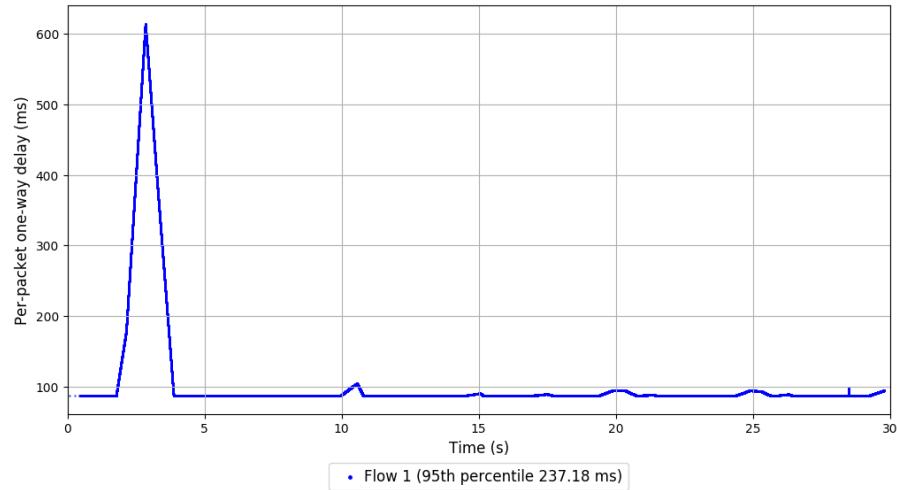
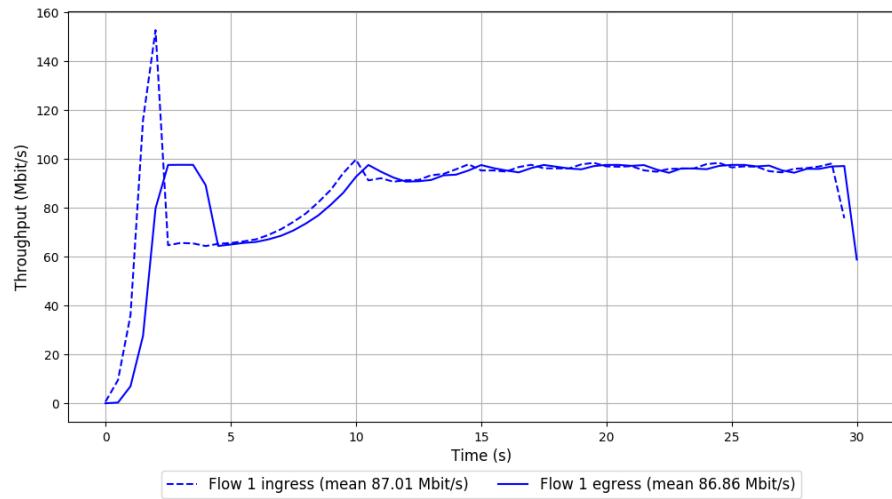


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-11-15 09:21:50
End at: 2018-11-15 09:22:20
Local clock offset: -6.377 ms
Remote clock offset: 0.662 ms

# Below is generated by plot.py at 2018-11-15 09:48:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.86 Mbit/s
95th percentile per-packet one-way delay: 237.180 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 86.86 Mbit/s
95th percentile per-packet one-way delay: 237.180 ms
Loss rate: 0.74%
```

Run 5: Report of PCC-Allegro — Data Link

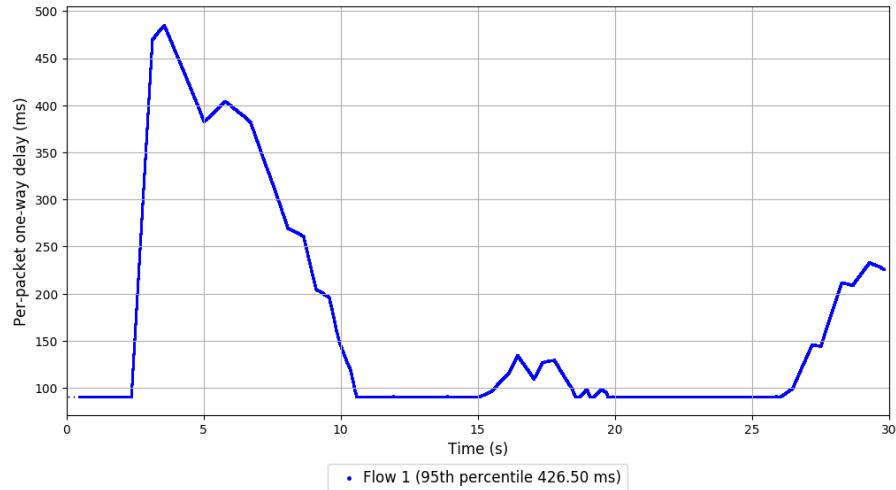
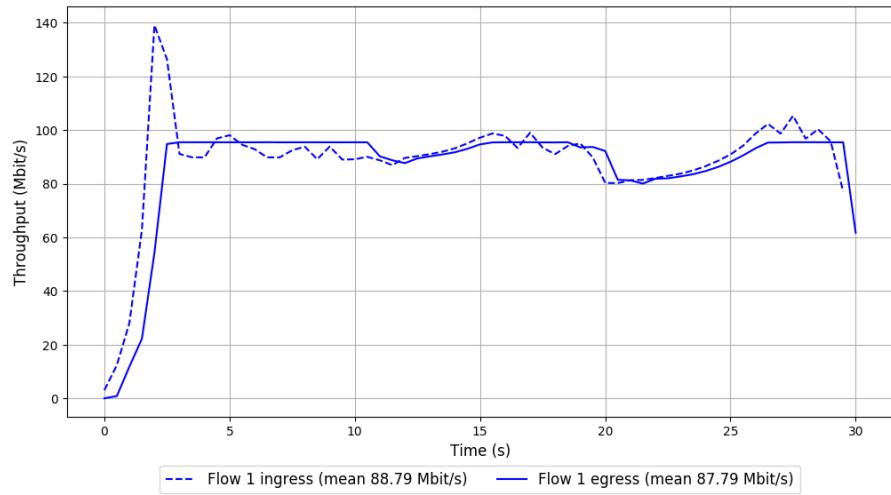


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-11-15 07:58:42
End at: 2018-11-15 07:59:12
Local clock offset: -7.461 ms
Remote clock offset: 1.447 ms

# Below is generated by plot.py at 2018-11-15 09:49:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.79 Mbit/s
95th percentile per-packet one-way delay: 426.503 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 87.79 Mbit/s
95th percentile per-packet one-way delay: 426.503 ms
Loss rate: 1.69%
```

Run 1: Report of PCC-Expr — Data Link

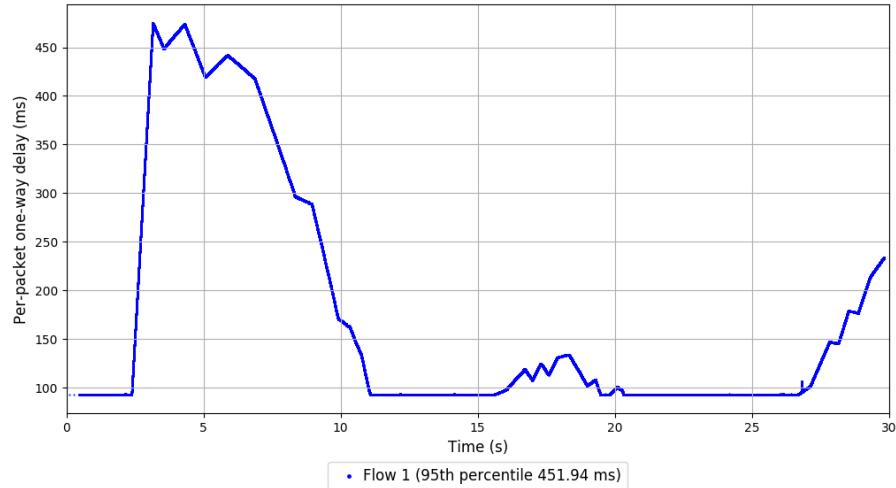
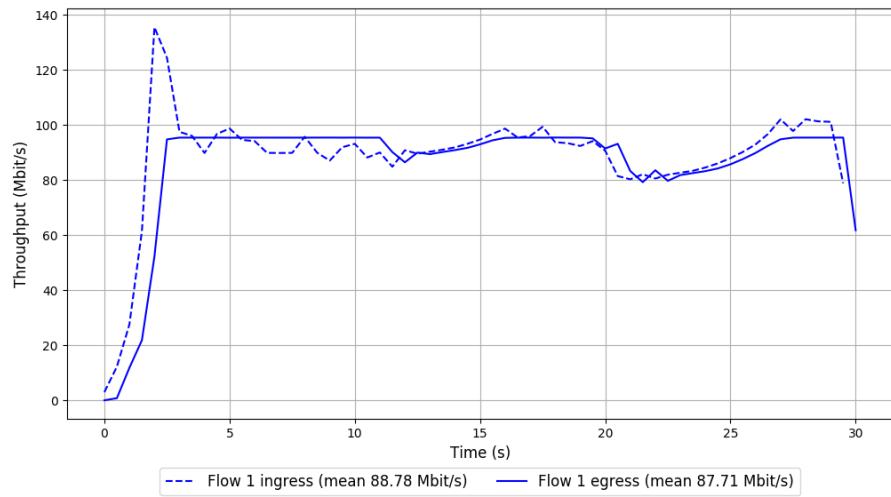


Run 2: Statistics of PCC-Expr

```
Start at: 2018-11-15 08:20:01
End at: 2018-11-15 08:20:31
Local clock offset: -6.424 ms
Remote clock offset: -1.76 ms

# Below is generated by plot.py at 2018-11-15 09:49:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.71 Mbit/s
95th percentile per-packet one-way delay: 451.937 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 87.71 Mbit/s
95th percentile per-packet one-way delay: 451.937 ms
Loss rate: 1.77%
```

Run 2: Report of PCC-Expr — Data Link

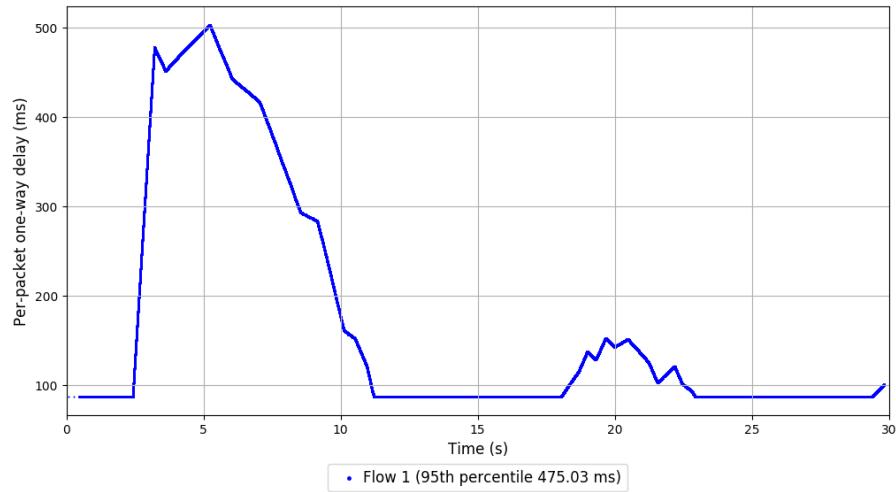
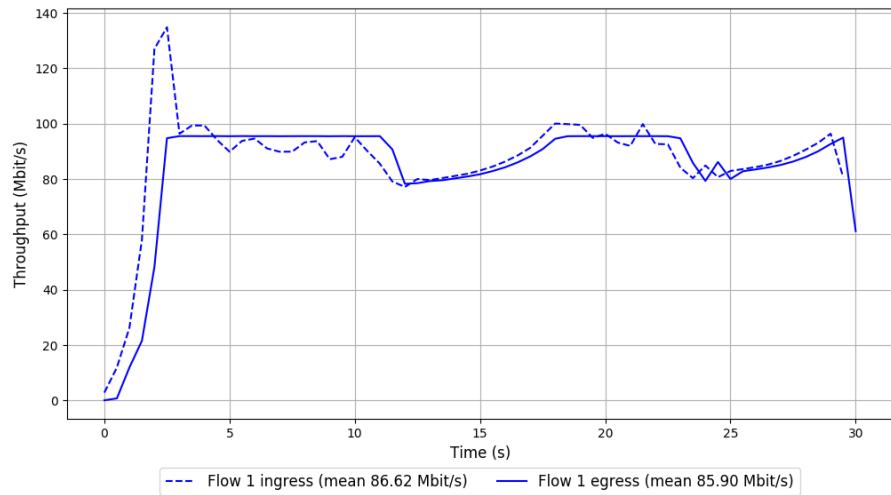


Run 3: Statistics of PCC-Expr

```
Start at: 2018-11-15 08:41:28
End at: 2018-11-15 08:41:58
Local clock offset: -2.563 ms
Remote clock offset: 0.196 ms

# Below is generated by plot.py at 2018-11-15 09:49:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.90 Mbit/s
95th percentile per-packet one-way delay: 475.034 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 85.90 Mbit/s
95th percentile per-packet one-way delay: 475.034 ms
Loss rate: 1.40%
```

Run 3: Report of PCC-Expr — Data Link

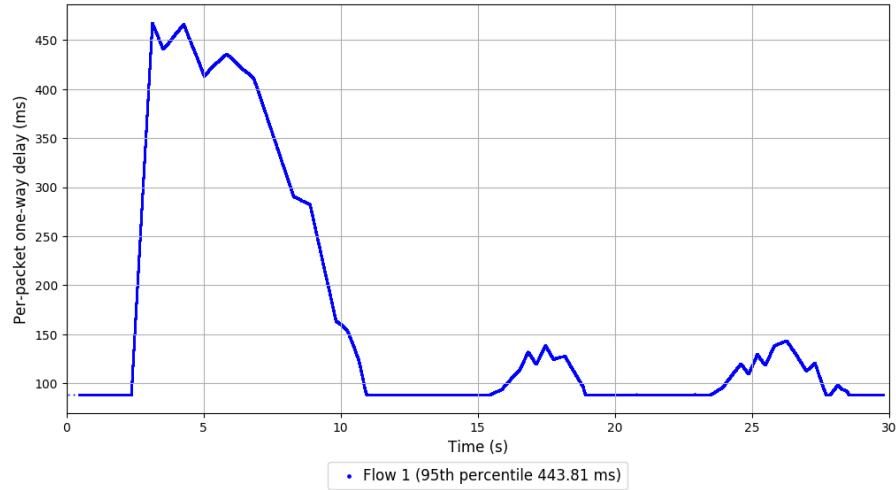
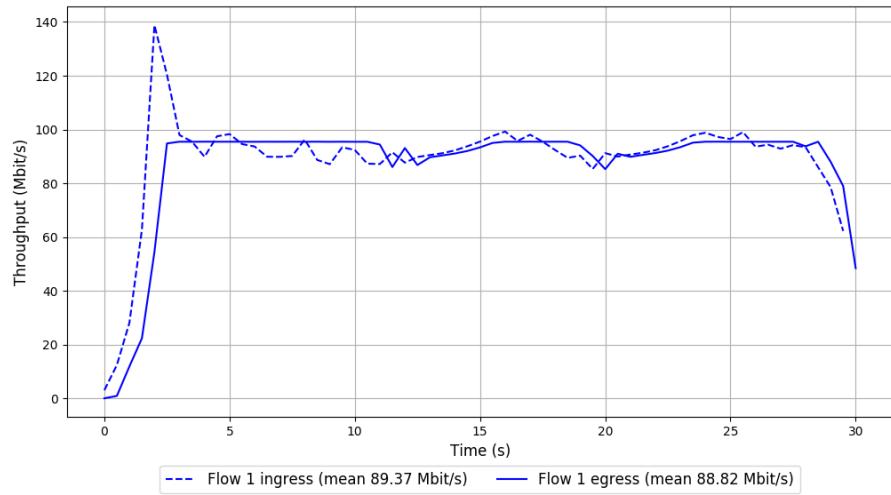


Run 4: Statistics of PCC-Expr

```
Start at: 2018-11-15 09:02:49
End at: 2018-11-15 09:03:19
Local clock offset: -4.104 ms
Remote clock offset: -0.141 ms

# Below is generated by plot.py at 2018-11-15 09:49:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.82 Mbit/s
95th percentile per-packet one-way delay: 443.815 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 88.82 Mbit/s
95th percentile per-packet one-way delay: 443.815 ms
Loss rate: 1.18%
```

Run 4: Report of PCC-Expr — Data Link

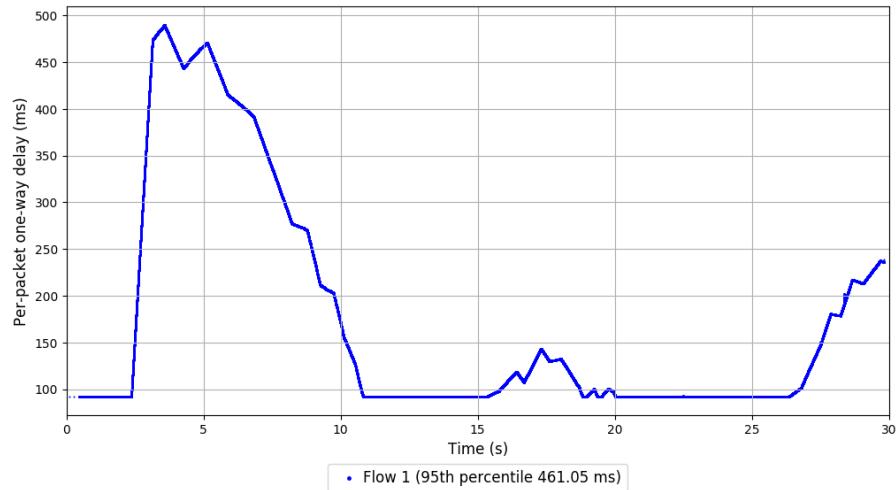
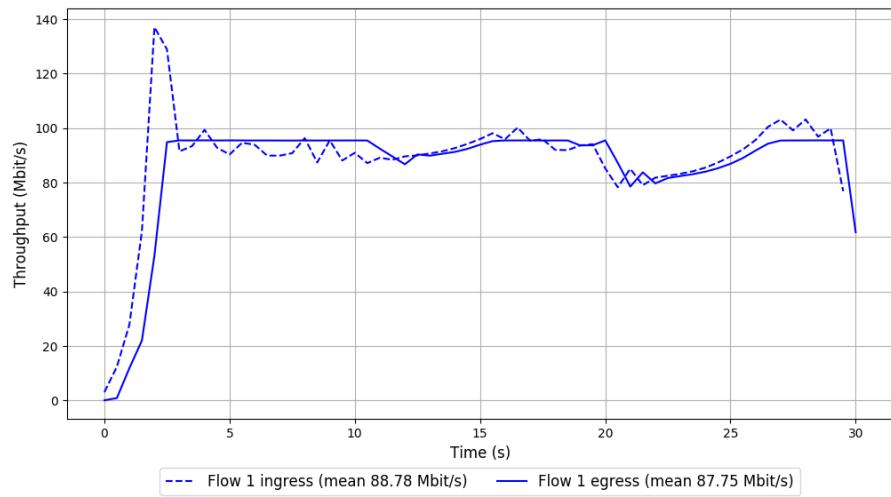


Run 5: Statistics of PCC-Expr

```
Start at: 2018-11-15 09:24:09
End at: 2018-11-15 09:24:39
Local clock offset: -6.52 ms
Remote clock offset: -4.336 ms

# Below is generated by plot.py at 2018-11-15 09:49:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.75 Mbit/s
95th percentile per-packet one-way delay: 461.047 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 87.75 Mbit/s
95th percentile per-packet one-way delay: 461.047 ms
Loss rate: 1.72%
```

Run 5: Report of PCC-Expr — Data Link

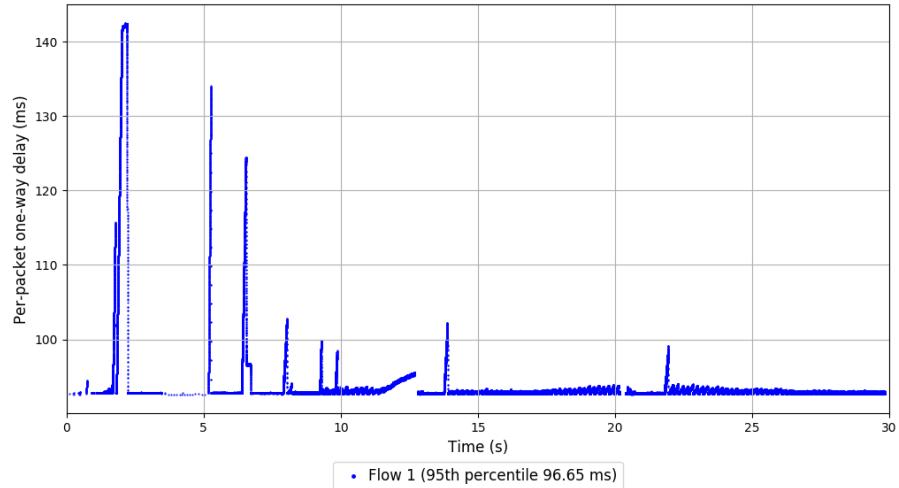
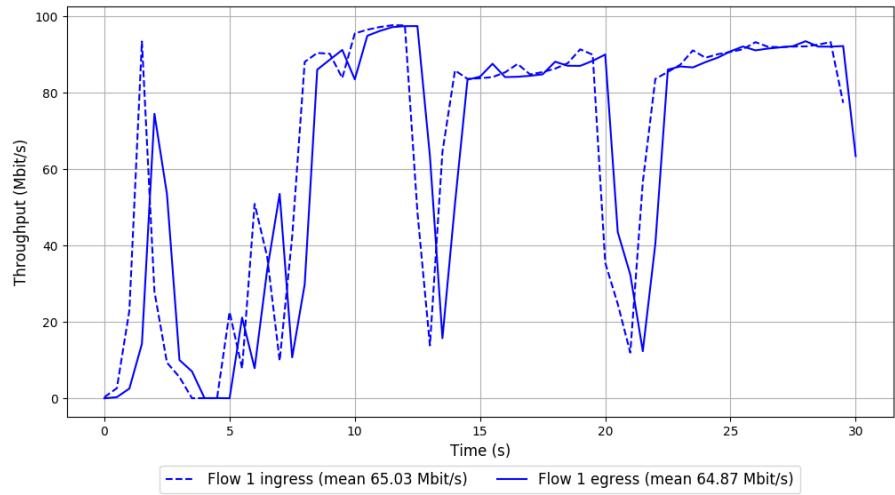


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2018-11-15 08:09:20
End at: 2018-11-15 08:09:50
Local clock offset: -6.397 ms
Remote clock offset: -0.928 ms

# Below is generated by plot.py at 2018-11-15 09:49:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.87 Mbit/s
95th percentile per-packet one-way delay: 96.647 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 64.87 Mbit/s
95th percentile per-packet one-way delay: 96.647 ms
Loss rate: 0.82%
```

Run 1: Report of QUIC Cubic — Data Link

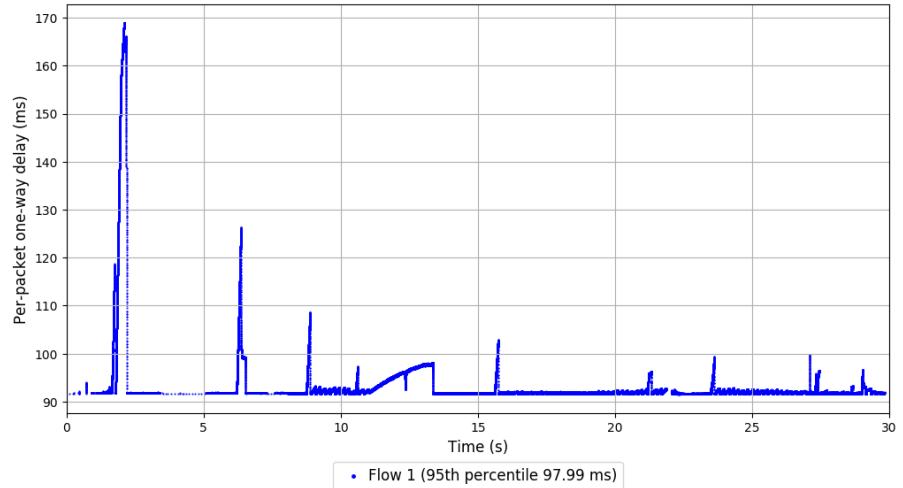
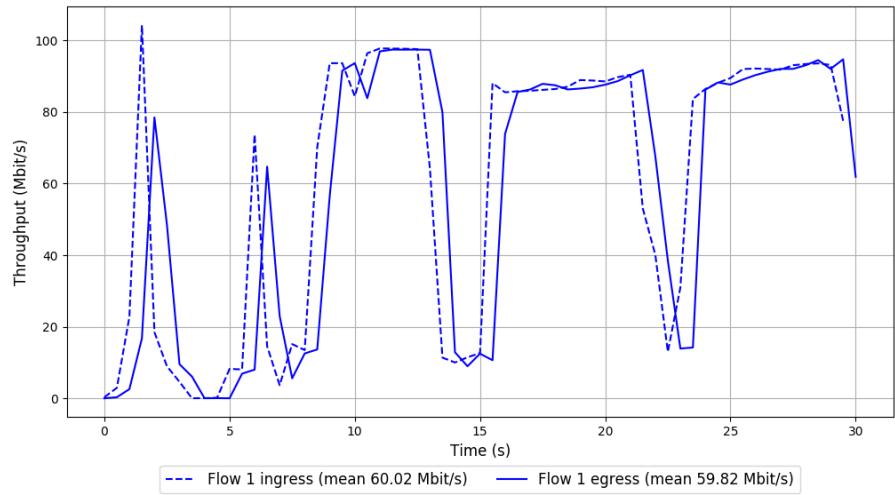


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-11-15 08:30:46
End at: 2018-11-15 08:31:16
Local clock offset: -4.562 ms
Remote clock offset: -2.698 ms

# Below is generated by plot.py at 2018-11-15 09:49:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.82 Mbit/s
95th percentile per-packet one-way delay: 97.988 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 59.82 Mbit/s
95th percentile per-packet one-way delay: 97.988 ms
Loss rate: 0.90%
```

Run 2: Report of QUIC Cubic — Data Link

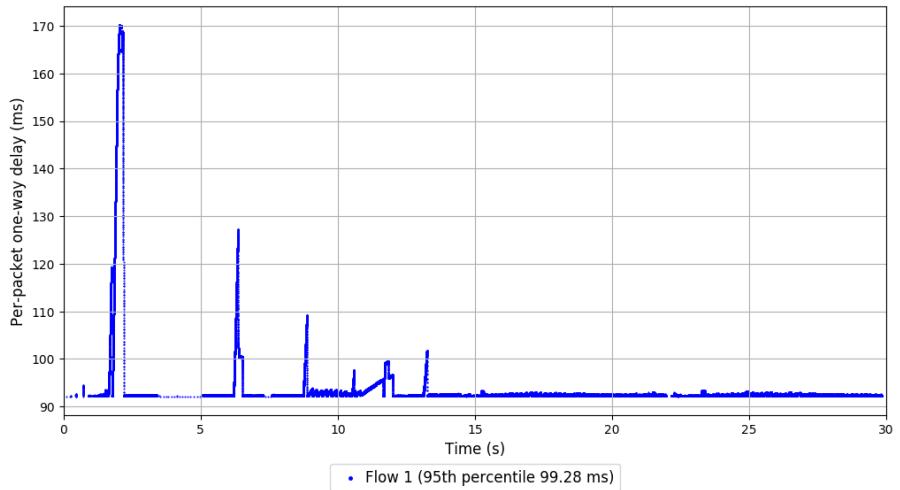
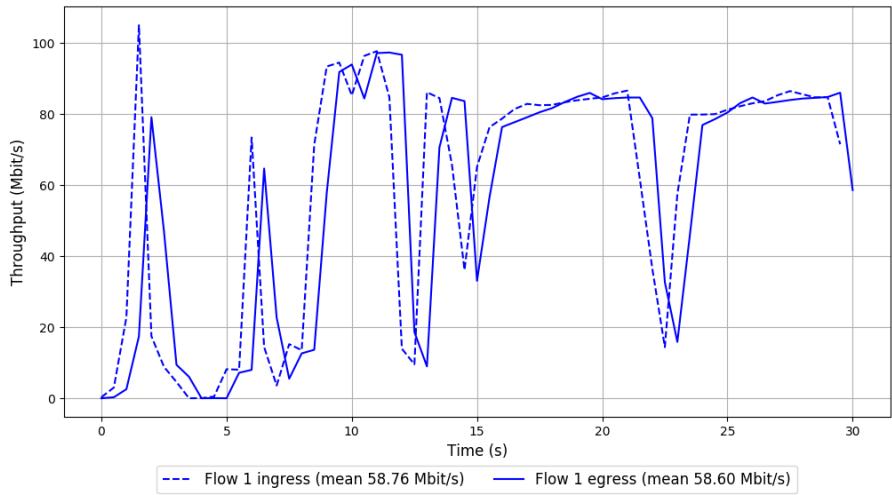


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-11-15 08:52:09
End at: 2018-11-15 08:52:39
Local clock offset: -0.657 ms
Remote clock offset: -3.722 ms

# Below is generated by plot.py at 2018-11-15 09:49:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.60 Mbit/s
95th percentile per-packet one-way delay: 99.276 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 58.60 Mbit/s
95th percentile per-packet one-way delay: 99.276 ms
Loss rate: 0.84%
```

Run 3: Report of QUIC Cubic — Data Link

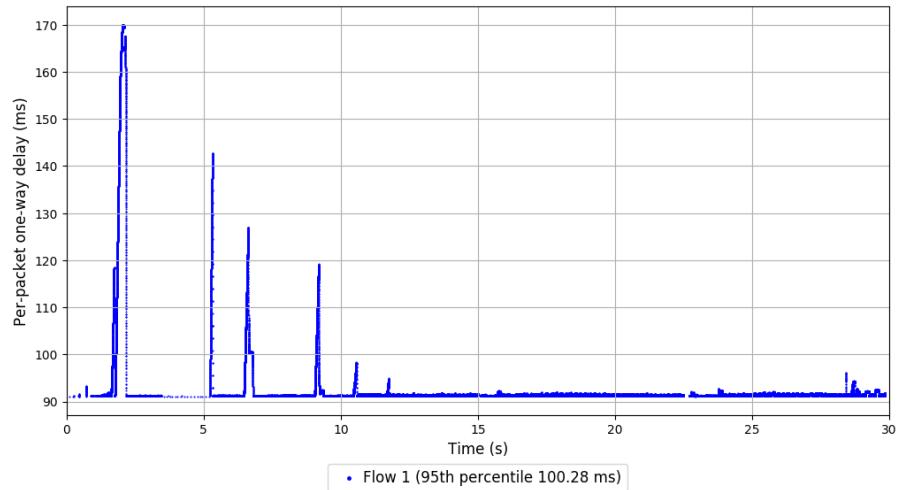
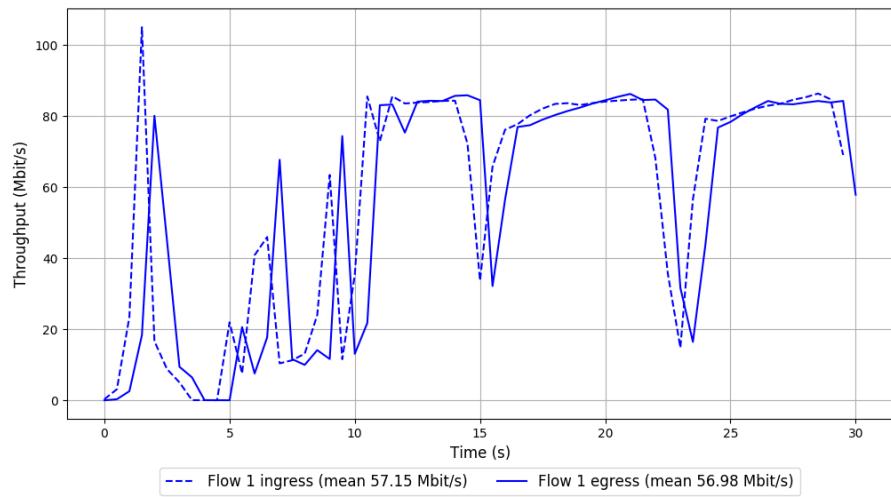


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-11-15 09:13:29
End at: 2018-11-15 09:13:59
Local clock offset: -6.392 ms
Remote clock offset: -3.941 ms

# Below is generated by plot.py at 2018-11-15 09:49:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.98 Mbit/s
95th percentile per-packet one-way delay: 100.283 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 56.98 Mbit/s
95th percentile per-packet one-way delay: 100.283 ms
Loss rate: 0.86%
```

Run 4: Report of QUIC Cubic — Data Link

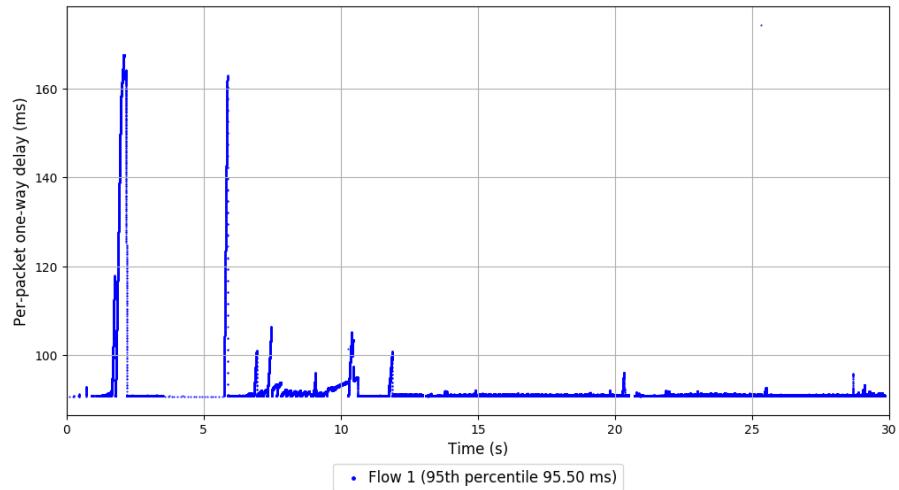
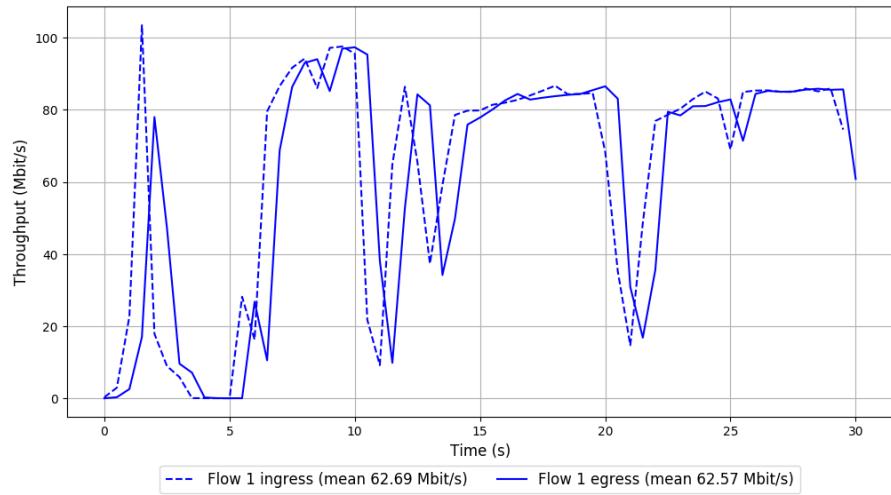


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-11-15 09:34:55
End at: 2018-11-15 09:35:25
Local clock offset: -7.672 ms
Remote clock offset: -3.581 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.57 Mbit/s
95th percentile per-packet one-way delay: 95.495 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 62.57 Mbit/s
95th percentile per-packet one-way delay: 95.495 ms
Loss rate: 0.77%
```

Run 5: Report of QUIC Cubic — Data Link

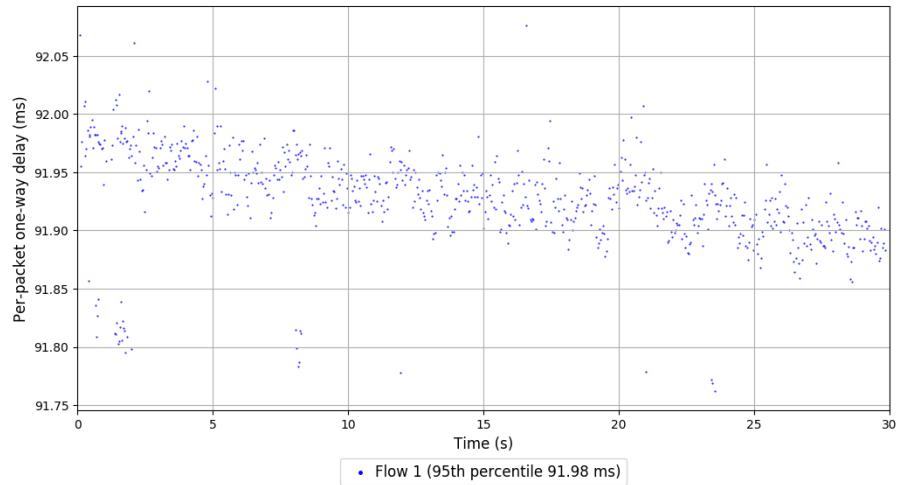
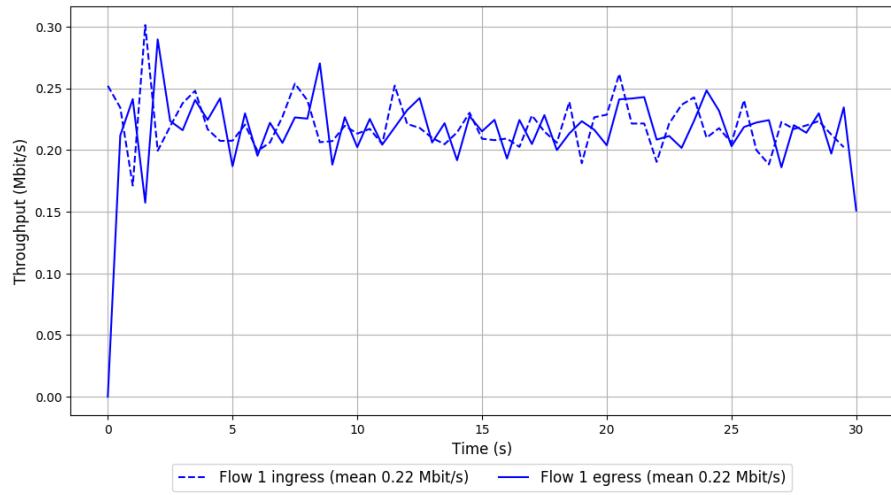


```
Run 1: Statistics of SCReAM

Start at: 2018-11-15 08:04:41
End at: 2018-11-15 08:05:11
Local clock offset: -7.23 ms
Remote clock offset: -0.312 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.981 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.981 ms
Loss rate: 0.64%
```

Run 1: Report of SCReAM — Data Link

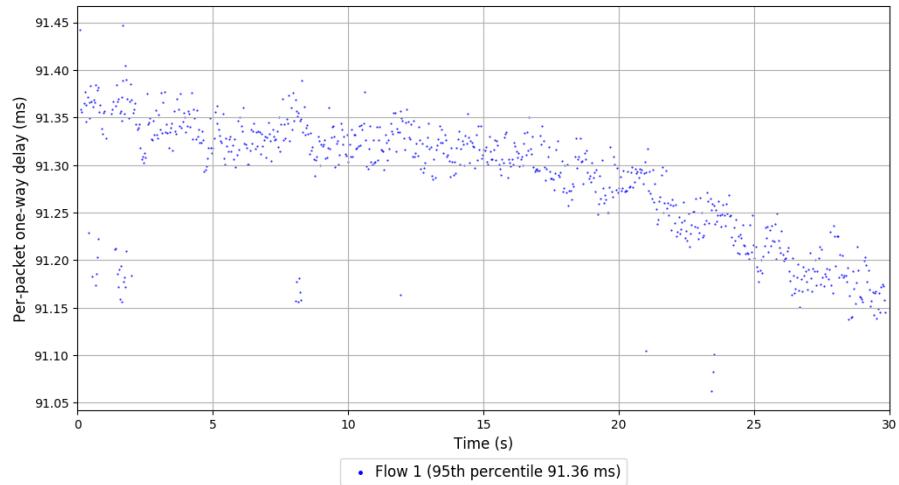
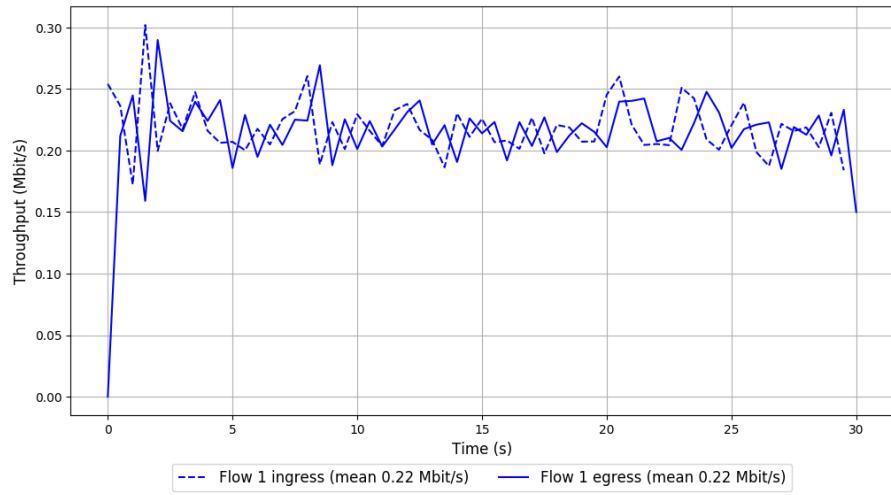


Run 2: Statistics of SCReAM

```
Start at: 2018-11-15 08:26:01
End at: 2018-11-15 08:26:31
Local clock offset: -7.237 ms
Remote clock offset: -2.31 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.363 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.363 ms
Loss rate: 0.51%
```

Run 2: Report of SCReAM — Data Link

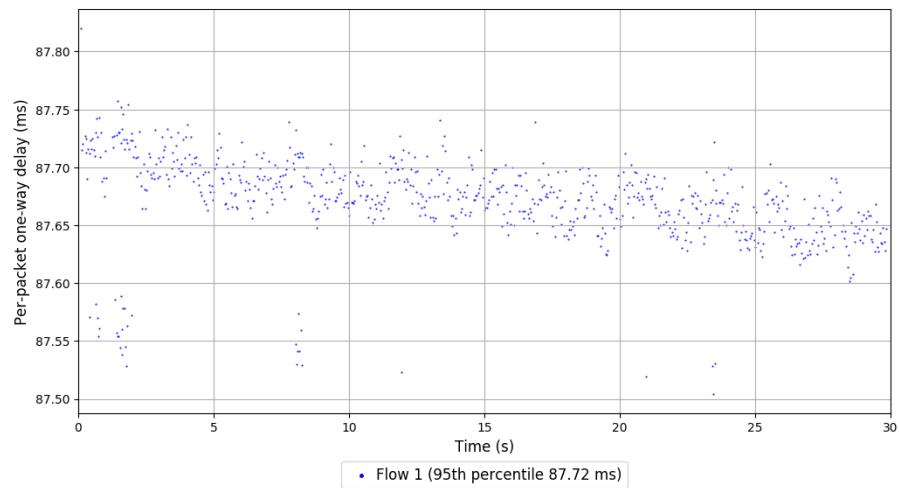
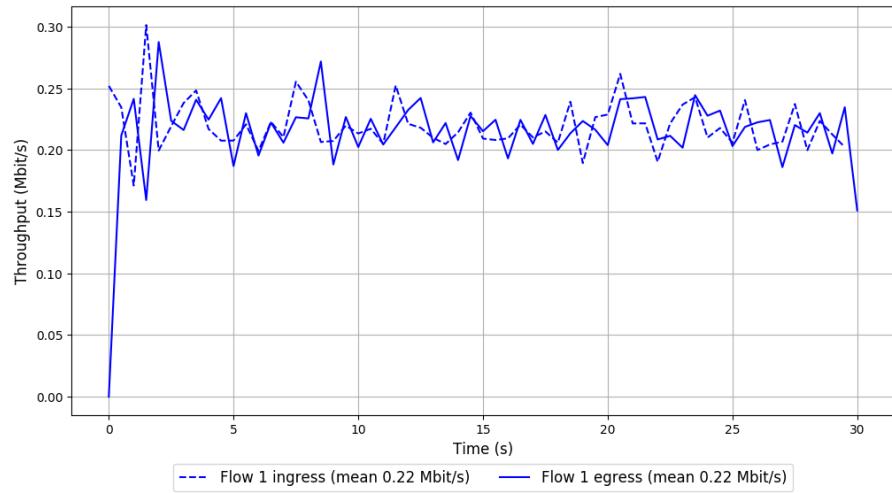


Run 3: Statistics of SCReAM

```
Start at: 2018-11-15 08:47:27
End at: 2018-11-15 08:47:57
Local clock offset: -1.094 ms
Remote clock offset: 1.176 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.723 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.723 ms
Loss rate: 0.64%
```

Run 3: Report of SCReAM — Data Link

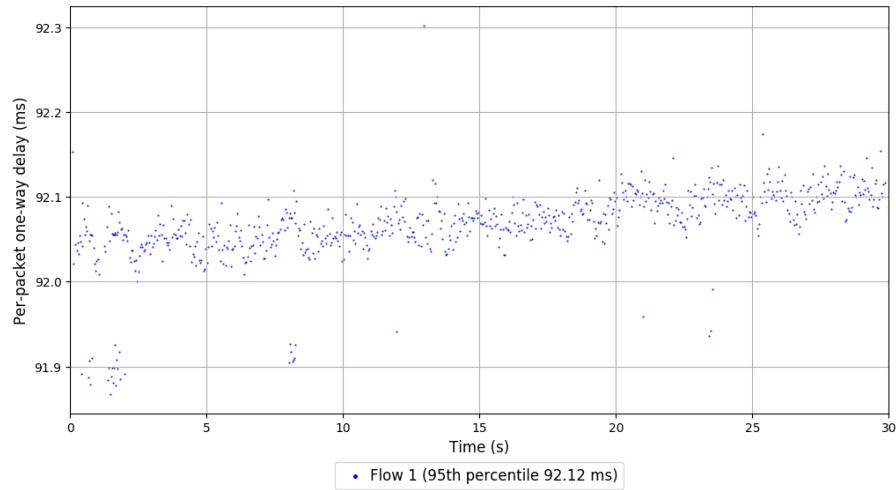
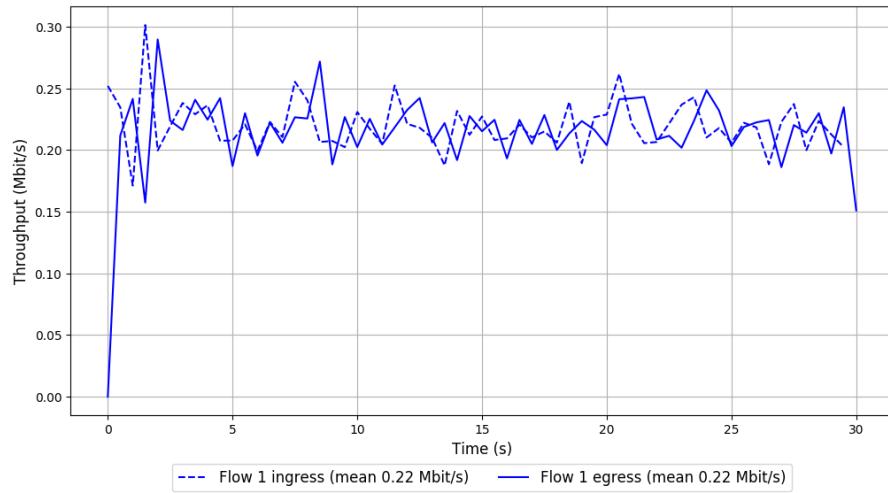


Run 4: Statistics of SCReAM

```
Start at: 2018-11-15 09:08:48
End at: 2018-11-15 09:09:18
Local clock offset: -5.684 ms
Remote clock offset: -3.994 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 92.118 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 92.118 ms
Loss rate: 0.64%
```

Run 4: Report of SCReAM — Data Link

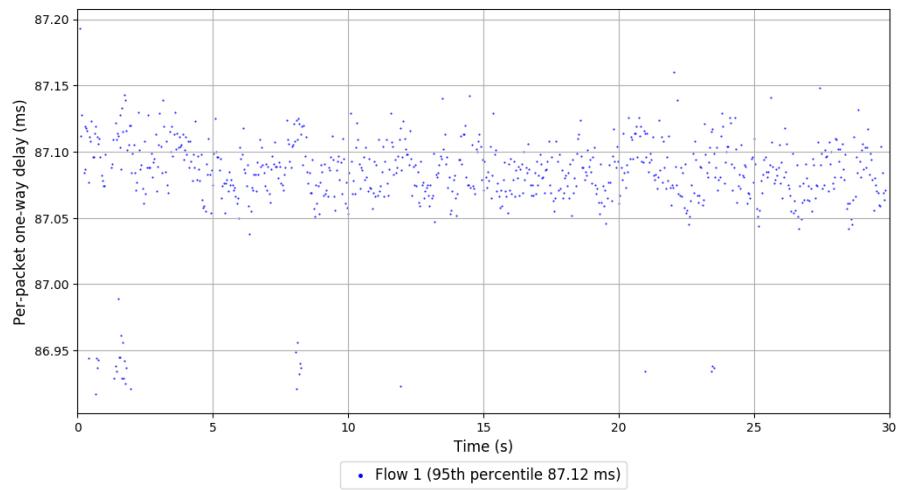
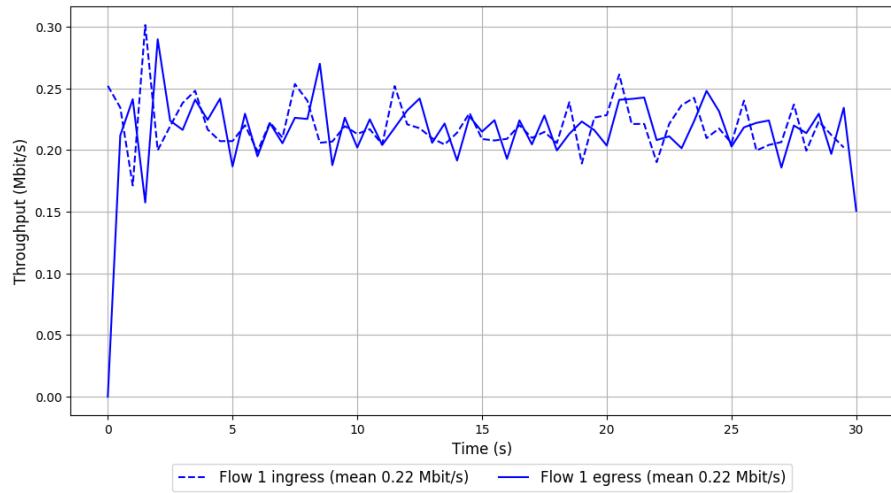


Run 5: Statistics of SCReAM

```
Start at: 2018-11-15 09:30:13
End at: 2018-11-15 09:30:43
Local clock offset: -7.529 ms
Remote clock offset: 0.374 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.121 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.121 ms
Loss rate: 0.64%
```

Run 5: Report of SCReAM — Data Link

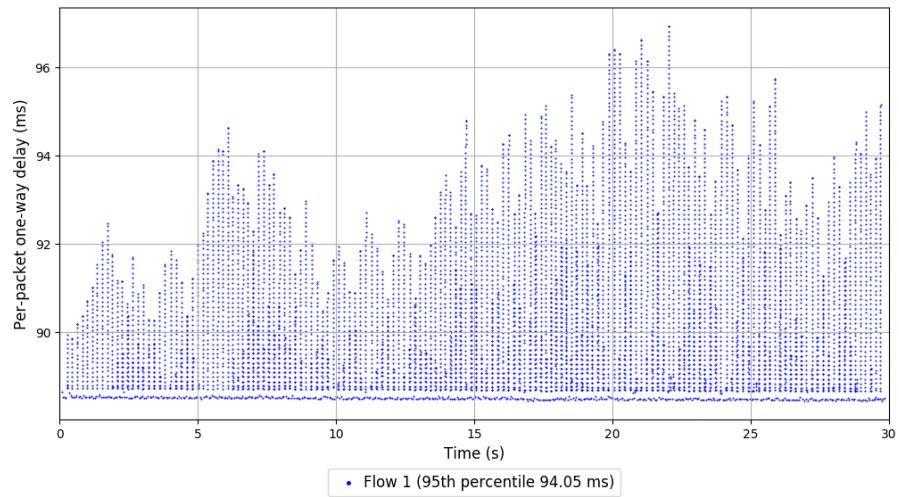
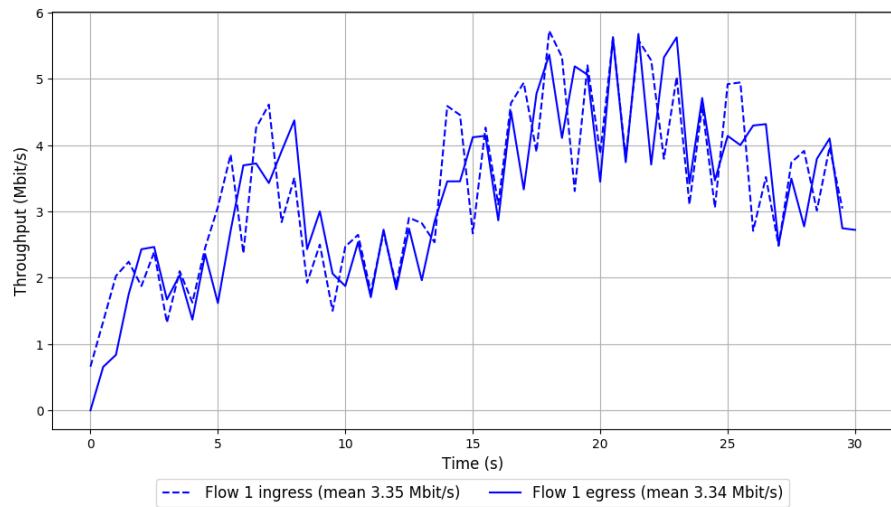


Run 1: Statistics of Sprout

```
Start at: 2018-11-15 08:03:33
End at: 2018-11-15 08:04:03
Local clock offset: -6.474 ms
Remote clock offset: 3.556 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 94.052 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 94.052 ms
Loss rate: 0.77%
```

Run 1: Report of Sprout — Data Link

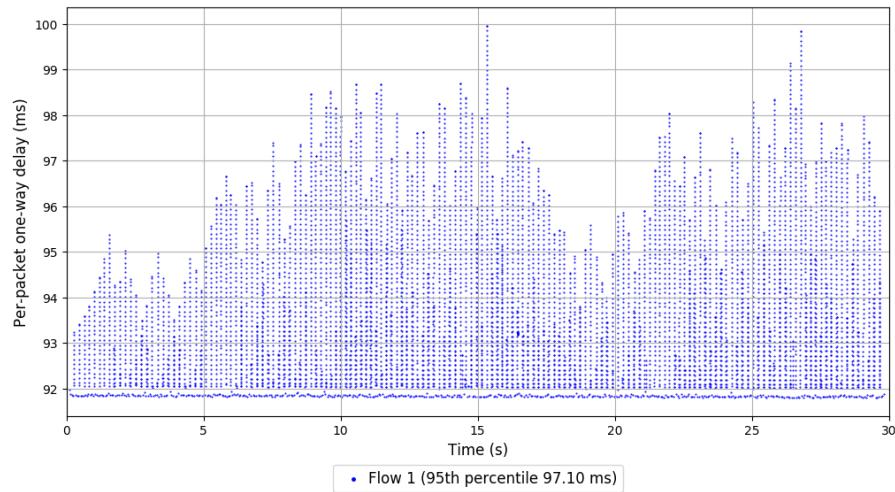
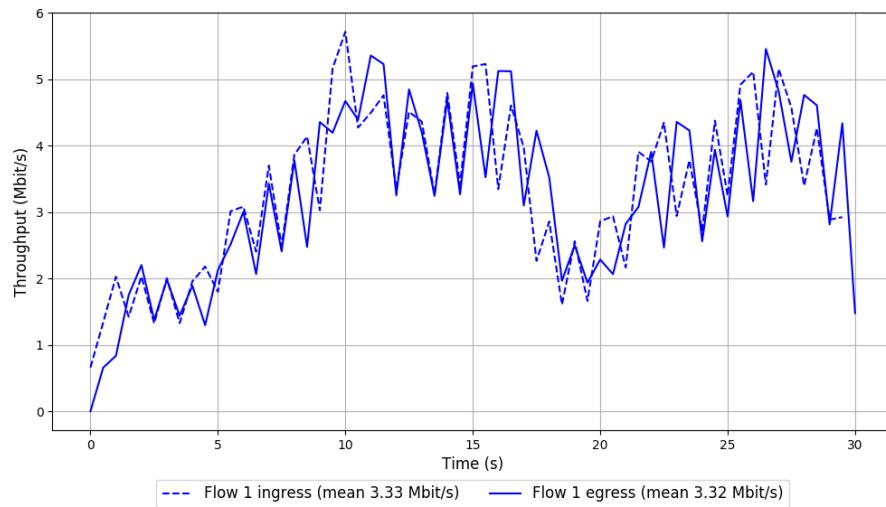


Run 2: Statistics of Sprout

```
Start at: 2018-11-15 08:24:53
End at: 2018-11-15 08:25:23
Local clock offset: -6.482 ms
Remote clock offset: -2.151 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.32 Mbit/s
95th percentile per-packet one-way delay: 97.098 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 3.32 Mbit/s
95th percentile per-packet one-way delay: 97.098 ms
Loss rate: 0.73%
```

Run 2: Report of Sprout — Data Link

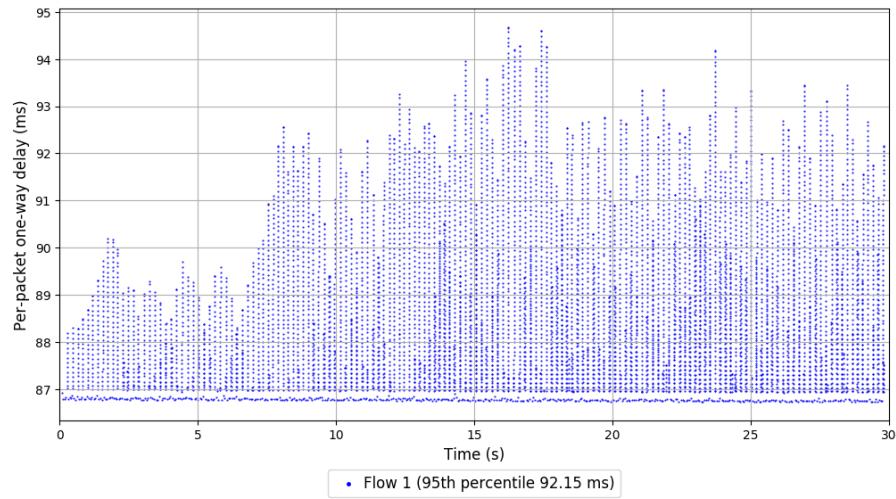
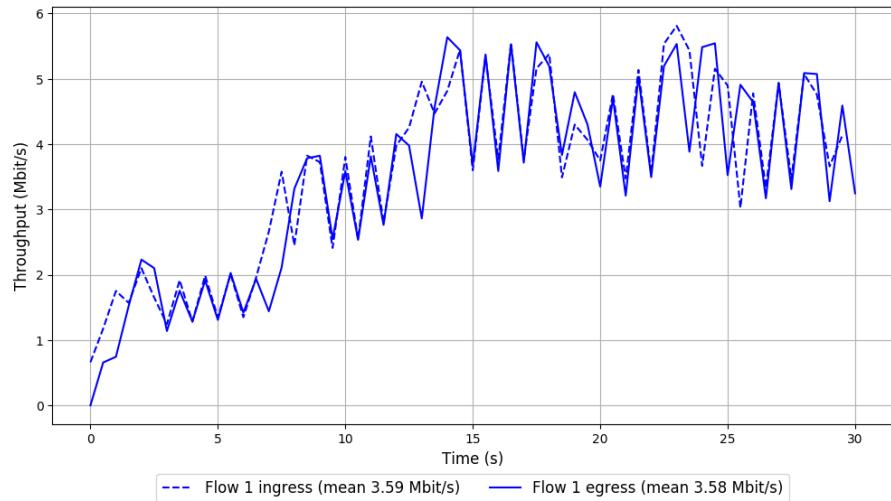


Run 3: Statistics of Sprout

```
Start at: 2018-11-15 08:46:19
End at: 2018-11-15 08:46:49
Local clock offset: -1.926 ms
Remote clock offset: 1.179 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.58 Mbit/s
95th percentile per-packet one-way delay: 92.146 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 3.58 Mbit/s
95th percentile per-packet one-way delay: 92.146 ms
Loss rate: 0.74%
```

Run 3: Report of Sprout — Data Link

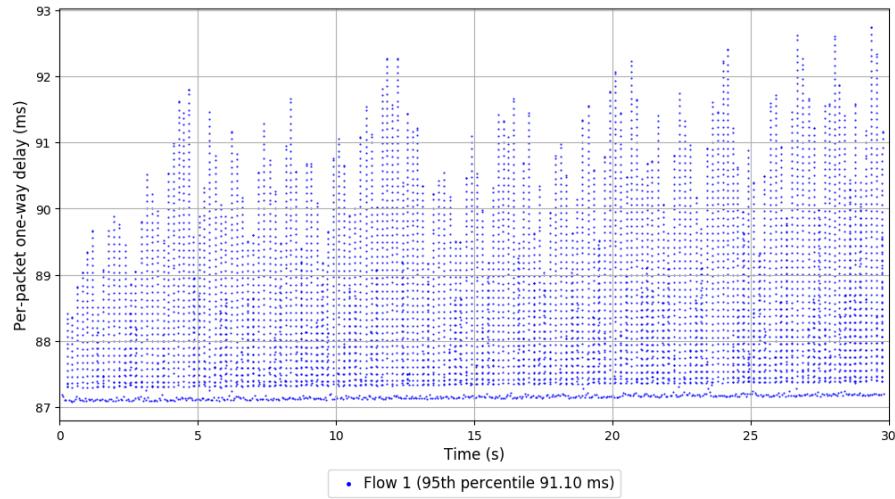
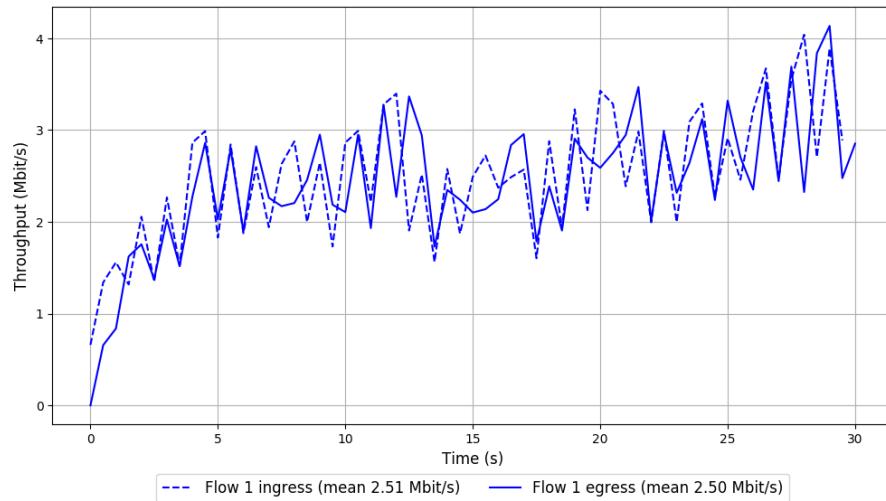


Run 4: Statistics of Sprout

```
Start at: 2018-11-15 09:07:40
End at: 2018-11-15 09:08:10
Local clock offset: -4.672 ms
Remote clock offset: 1.005 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 91.097 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 91.097 ms
Loss rate: 0.97%
```

Run 4: Report of Sprout — Data Link

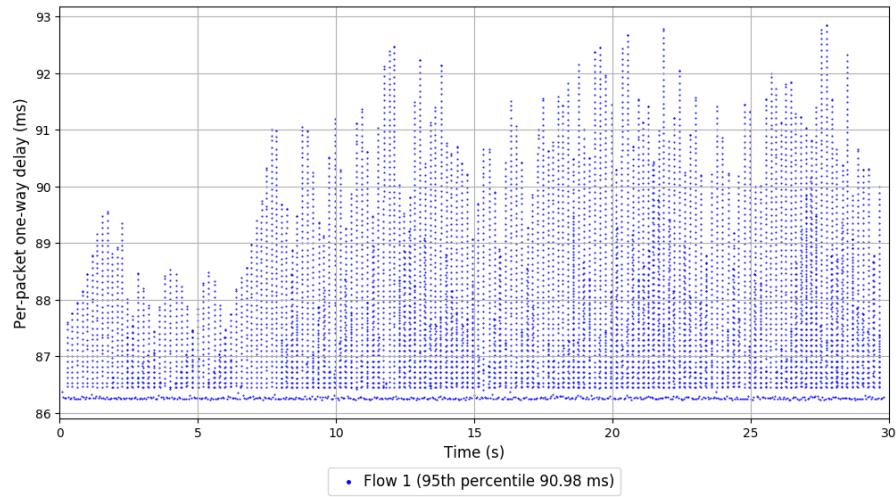
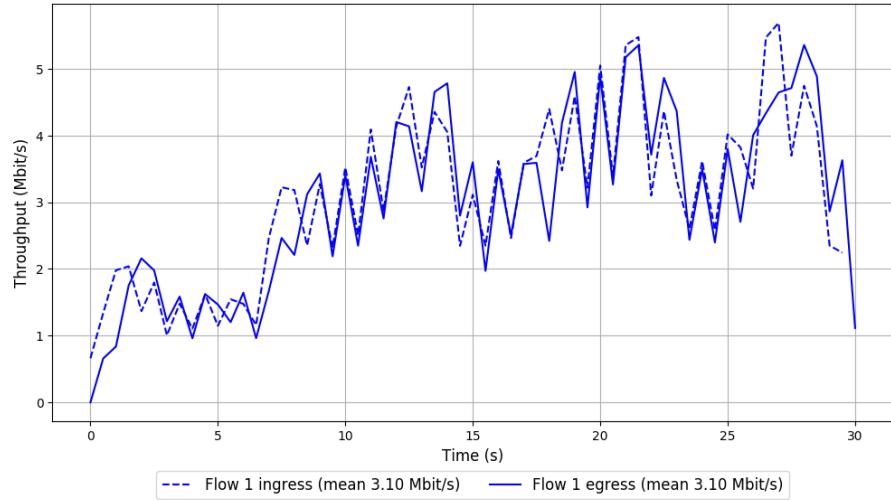


Run 5: Statistics of Sprout

```
Start at: 2018-11-15 09:29:05
End at: 2018-11-15 09:29:35
Local clock offset: -7.492 ms
Remote clock offset: 0.455 ms

# Below is generated by plot.py at 2018-11-15 09:49:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.10 Mbit/s
95th percentile per-packet one-way delay: 90.983 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 3.10 Mbit/s
95th percentile per-packet one-way delay: 90.983 ms
Loss rate: 0.61%
```

Run 5: Report of Sprout — Data Link

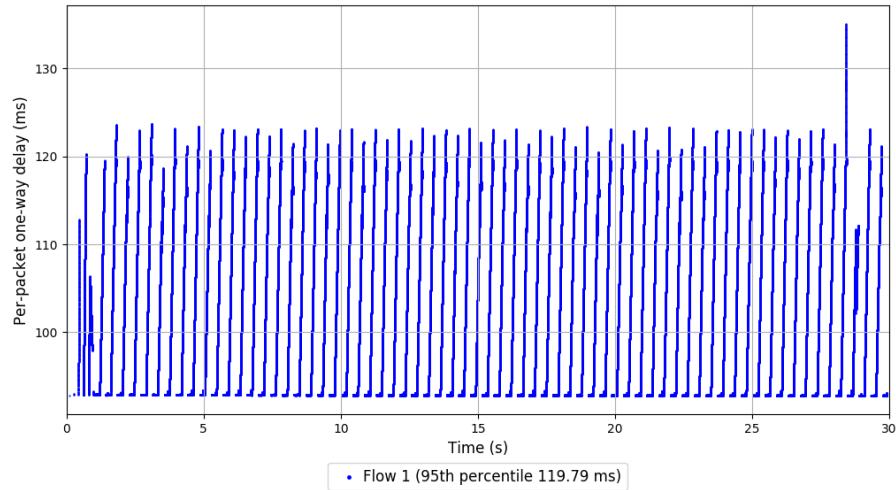
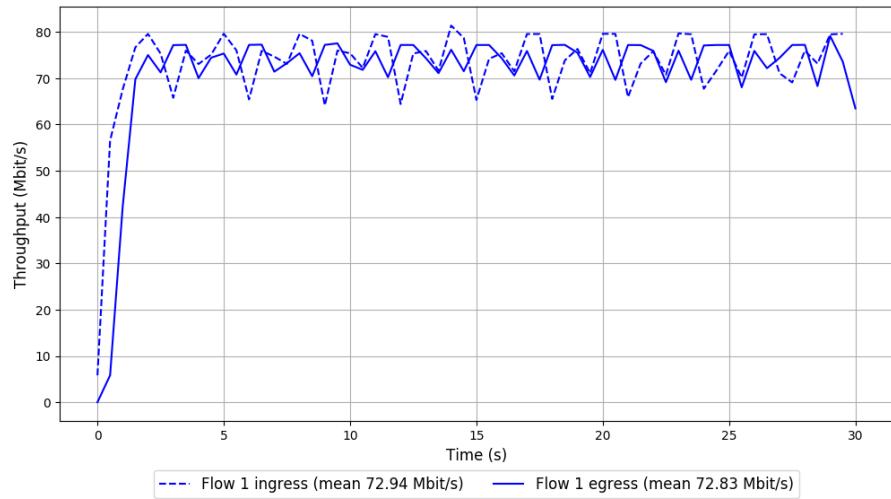


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-11-15 08:01:08
End at: 2018-11-15 08:01:38
Local clock offset: -6.563 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-11-15 09:50:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.83 Mbit/s
95th percentile per-packet one-way delay: 119.787 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 72.83 Mbit/s
95th percentile per-packet one-way delay: 119.787 ms
Loss rate: 0.75%
```

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

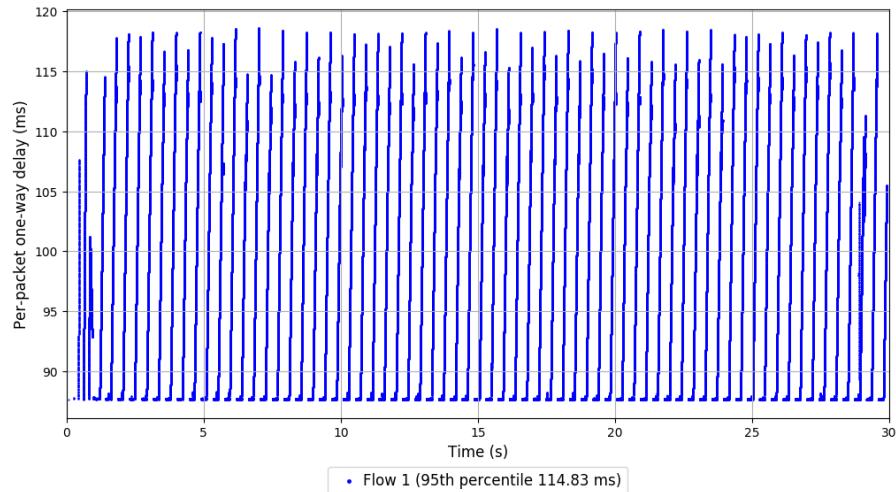
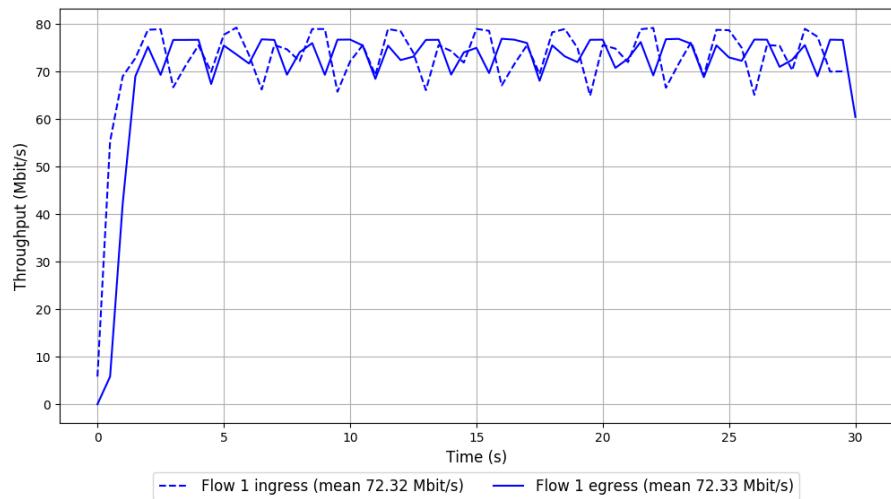


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-11-15 08:22:28
End at: 2018-11-15 08:22:58
Local clock offset: -6.454 ms
Remote clock offset: 2.903 ms

# Below is generated by plot.py at 2018-11-15 09:50:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.33 Mbit/s
95th percentile per-packet one-way delay: 114.828 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 72.33 Mbit/s
95th percentile per-packet one-way delay: 114.828 ms
Loss rate: 0.55%
```

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

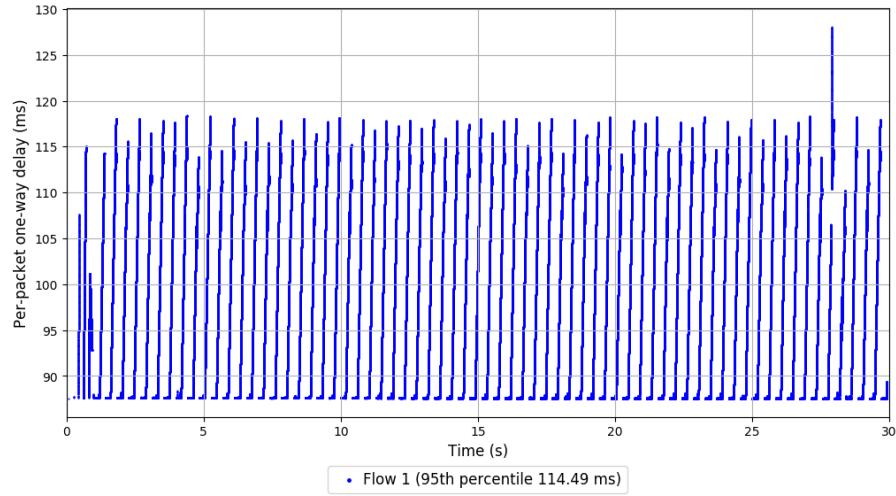
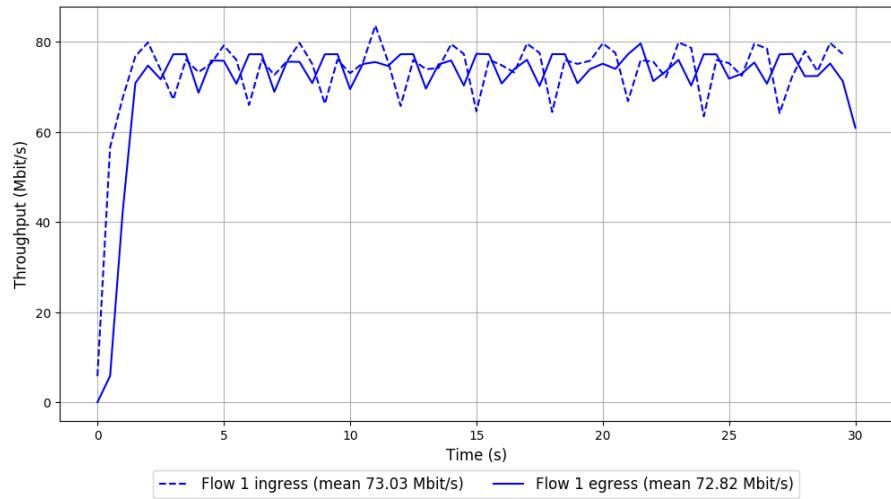


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-11-15 08:43:54
End at: 2018-11-15 08:44:25
Local clock offset: -1.506 ms
Remote clock offset: 1.279 ms

# Below is generated by plot.py at 2018-11-15 09:50:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.82 Mbit/s
95th percentile per-packet one-way delay: 114.491 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 72.82 Mbit/s
95th percentile per-packet one-way delay: 114.491 ms
Loss rate: 0.86%
```

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

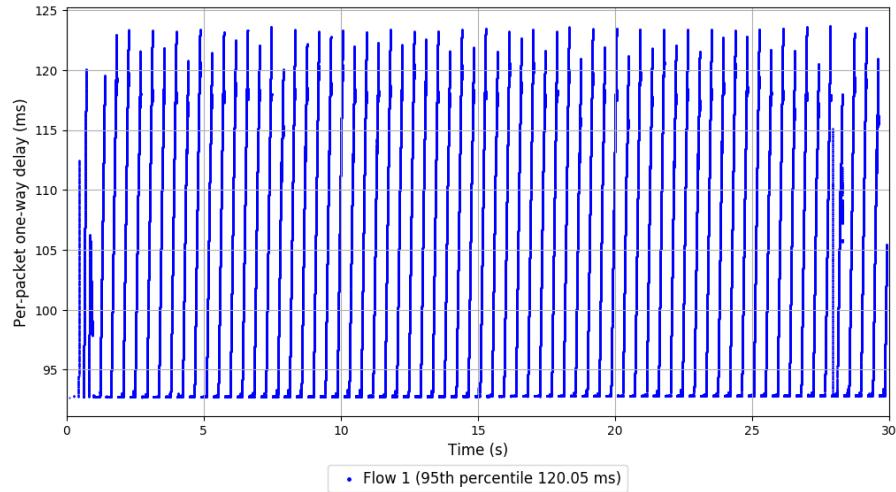
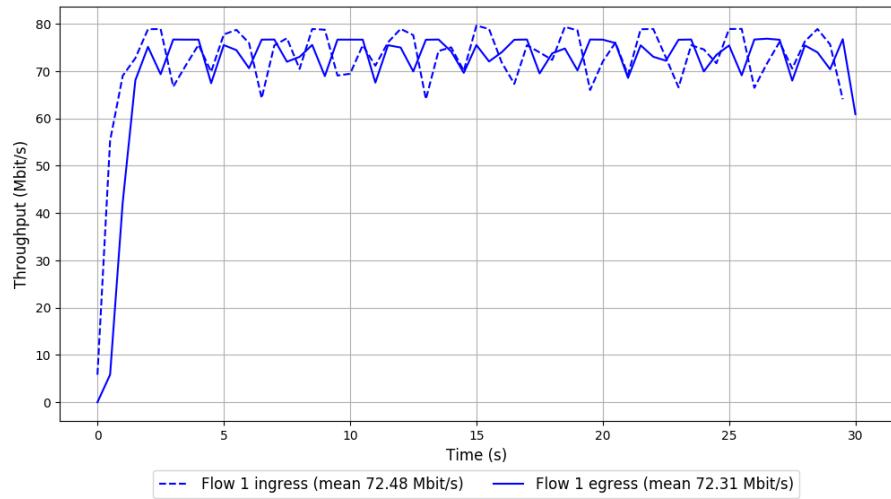


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-11-15 09:05:15
End at: 2018-11-15 09:05:46
Local clock offset: -4.156 ms
Remote clock offset: -3.887 ms

# Below is generated by plot.py at 2018-11-15 09:50:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.31 Mbit/s
95th percentile per-packet one-way delay: 120.045 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 72.31 Mbit/s
95th percentile per-packet one-way delay: 120.045 ms
Loss rate: 0.57%
```

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

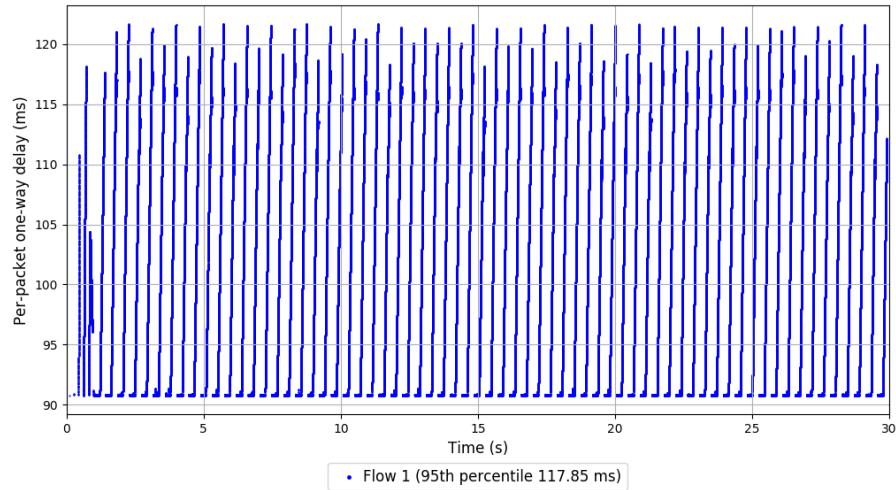
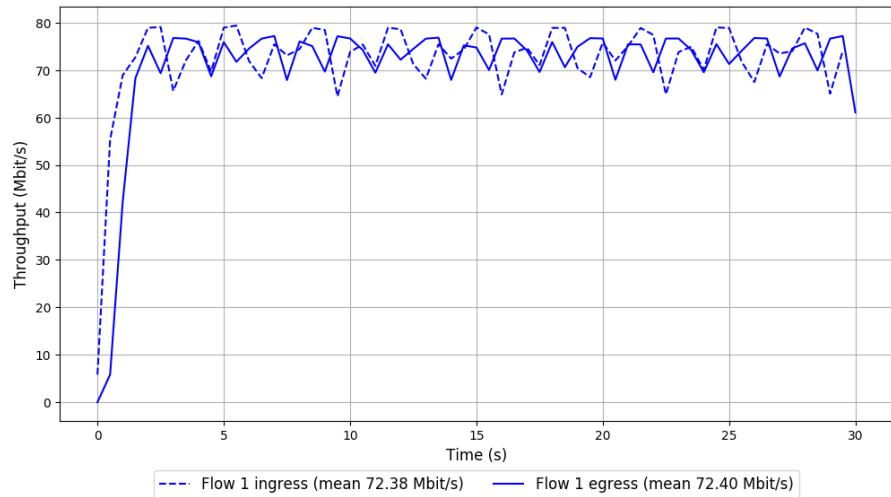


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-11-15 09:26:40
End at: 2018-11-15 09:27:10
Local clock offset: -7.411 ms
Remote clock offset: -3.252 ms

# Below is generated by plot.py at 2018-11-15 09:50:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.40 Mbit/s
95th percentile per-packet one-way delay: 117.848 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 72.40 Mbit/s
95th percentile per-packet one-way delay: 117.848 ms
Loss rate: 0.54%
```

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

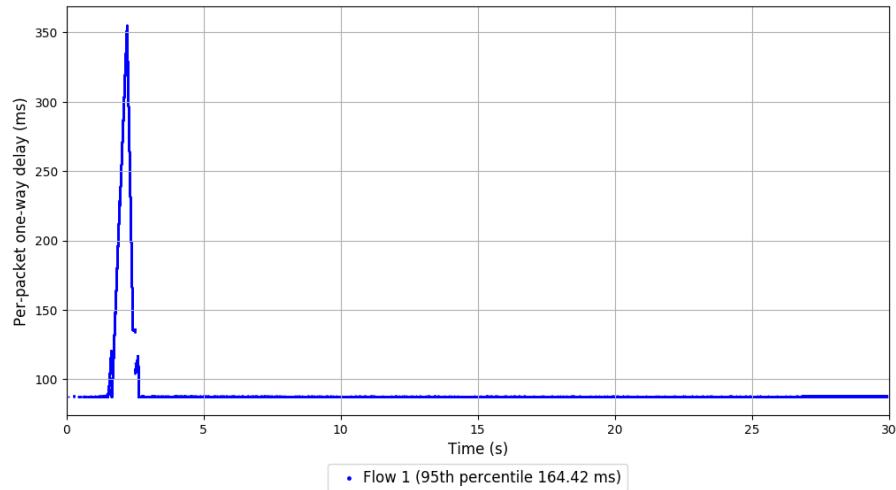
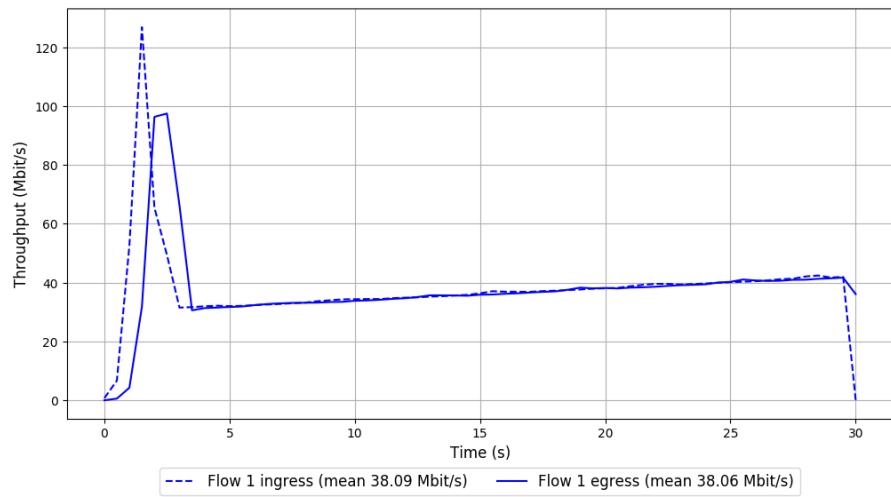


Run 1: Statistics of TCP Vegas

```
Start at: 2018-11-15 08:08:11
End at: 2018-11-15 08:08:41
Local clock offset: -7.162 ms
Remote clock offset: 3.002 ms

# Below is generated by plot.py at 2018-11-15 09:50:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 38.06 Mbit/s
95th percentile per-packet one-way delay: 164.420 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 38.06 Mbit/s
95th percentile per-packet one-way delay: 164.420 ms
Loss rate: 0.66%
```

Run 1: Report of TCP Vegas — Data Link

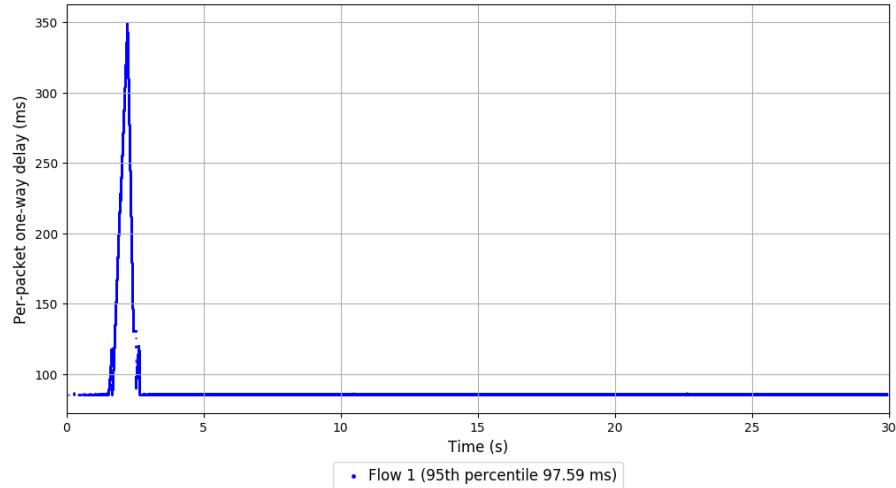
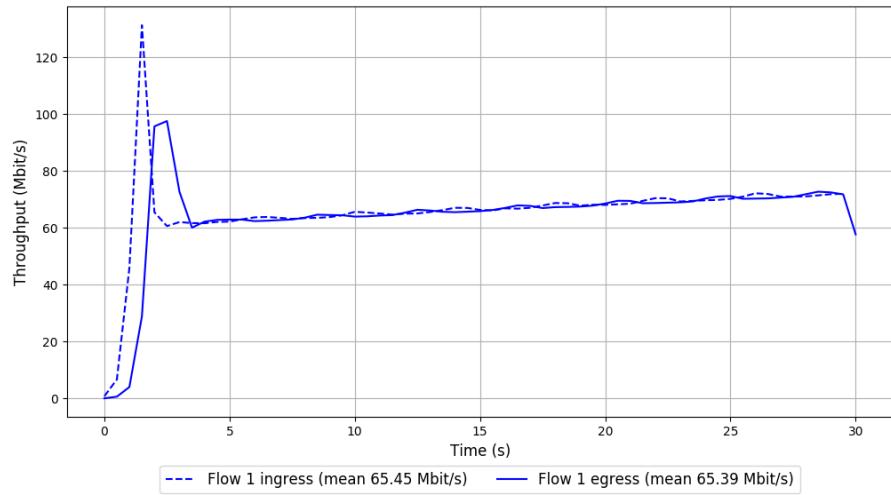


Run 2: Statistics of TCP Vegas

```
Start at: 2018-11-15 08:29:36
End at: 2018-11-15 08:30:06
Local clock offset: -5.766 ms
Remote clock offset: 3.455 ms

# Below is generated by plot.py at 2018-11-15 09:50:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.39 Mbit/s
95th percentile per-packet one-way delay: 97.591 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 65.39 Mbit/s
95th percentile per-packet one-way delay: 97.591 ms
Loss rate: 0.66%
```

Run 2: Report of TCP Vegas — Data Link

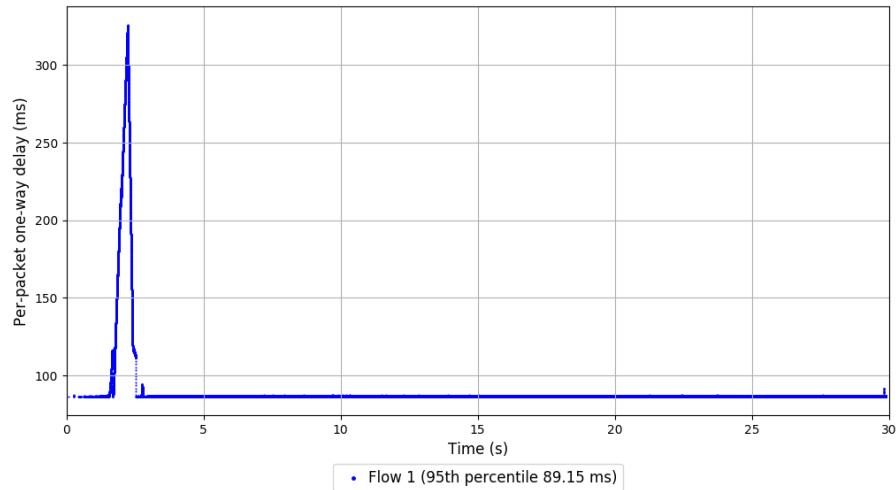
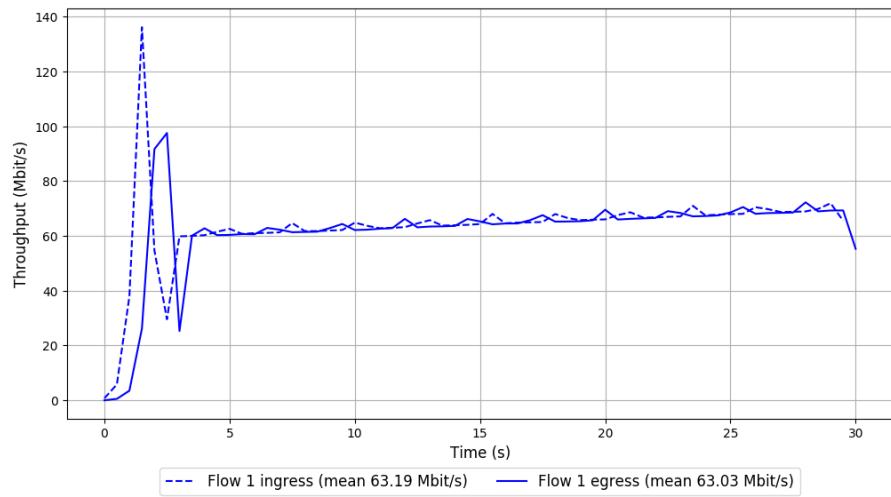


Run 3: Statistics of TCP Vegas

```
Start at: 2018-11-15 08:50:58
End at: 2018-11-15 08:51:28
Local clock offset: -0.7 ms
Remote clock offset: 2.254 ms

# Below is generated by plot.py at 2018-11-15 09:50:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.03 Mbit/s
95th percentile per-packet one-way delay: 89.149 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 63.03 Mbit/s
95th percentile per-packet one-way delay: 89.149 ms
Loss rate: 0.84%
```

Run 3: Report of TCP Vegas — Data Link

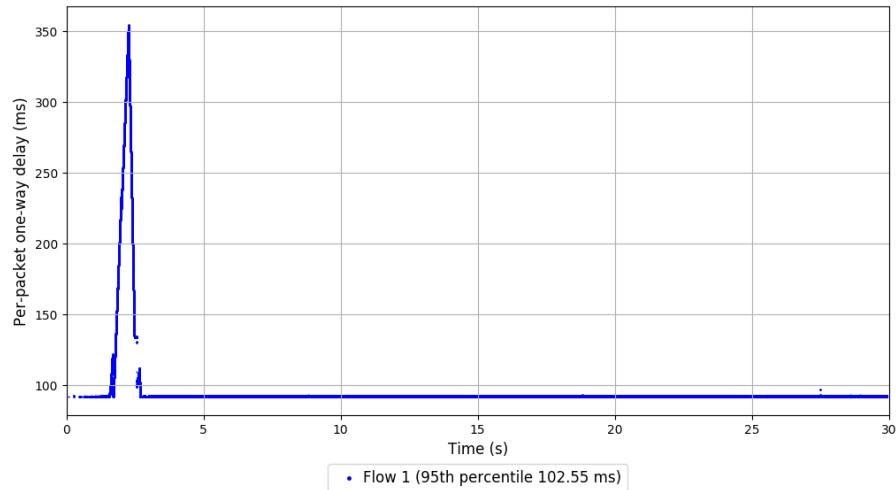
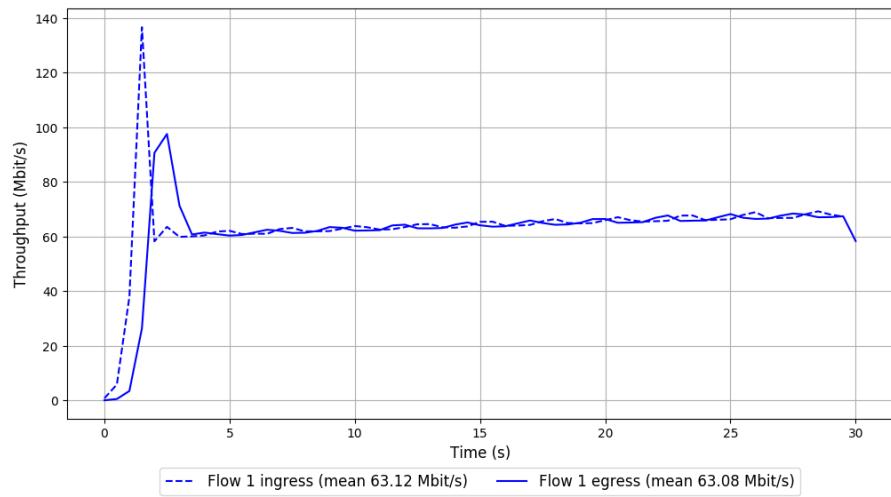


Run 4: Statistics of TCP Vegas

```
Start at: 2018-11-15 09:12:18
End at: 2018-11-15 09:12:48
Local clock offset: -5.477 ms
Remote clock offset: -2.947 ms

# Below is generated by plot.py at 2018-11-15 09:50:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.08 Mbit/s
95th percentile per-packet one-way delay: 102.547 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 63.08 Mbit/s
95th percentile per-packet one-way delay: 102.547 ms
Loss rate: 0.63%
```

Run 4: Report of TCP Vegas — Data Link

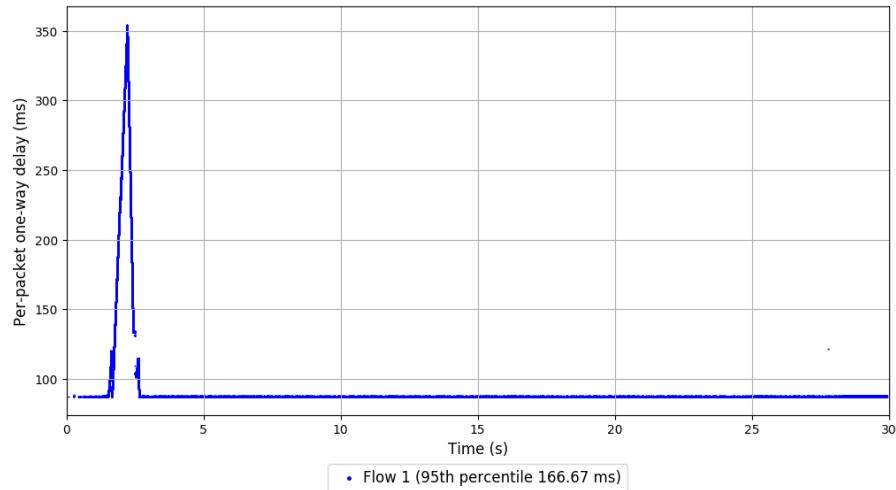
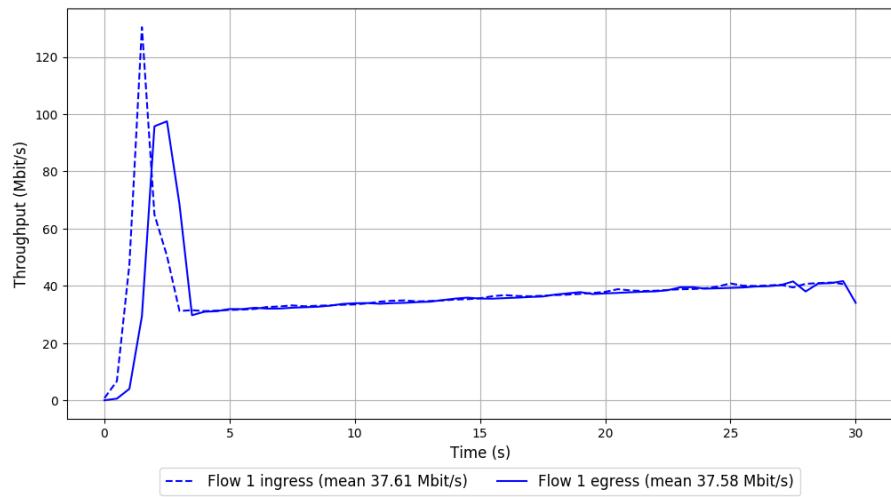


Run 5: Statistics of TCP Vegas

```
Start at: 2018-11-15 09:33:45
End at: 2018-11-15 09:34:15
Local clock offset: -7.629 ms
Remote clock offset: -0.761 ms

# Below is generated by plot.py at 2018-11-15 09:50:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.58 Mbit/s
95th percentile per-packet one-way delay: 166.667 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 37.58 Mbit/s
95th percentile per-packet one-way delay: 166.667 ms
Loss rate: 0.66%
```

Run 5: Report of TCP Vegas — Data Link

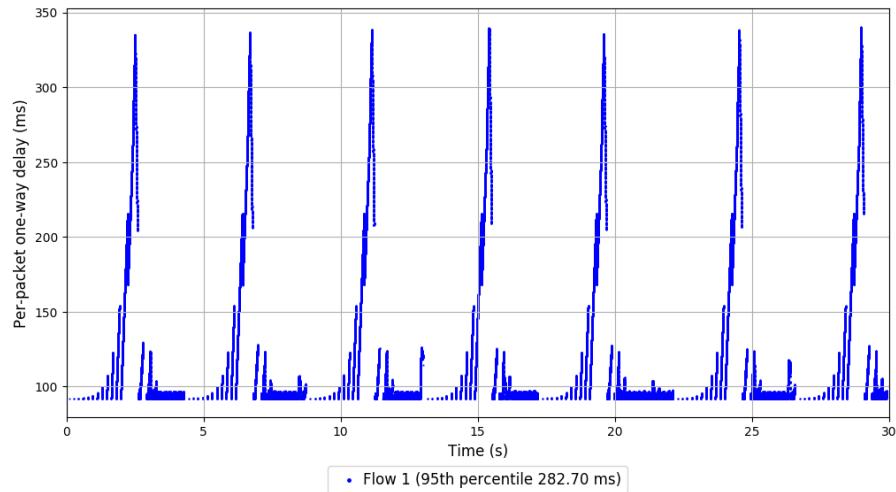
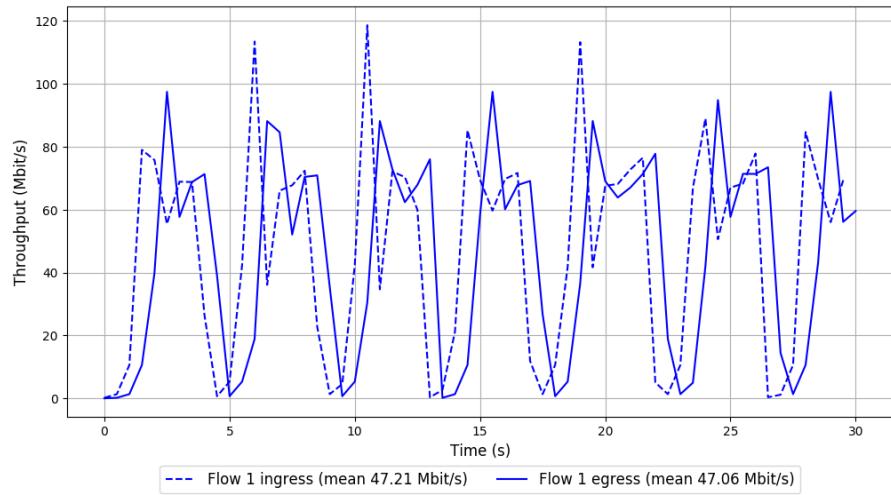


Run 1: Statistics of Verus

```
Start at: 2018-11-15 08:07:00
End at: 2018-11-15 08:07:30
Local clock offset: -7.255 ms
Remote clock offset: -0.667 ms

# Below is generated by plot.py at 2018-11-15 09:51:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.06 Mbit/s
95th percentile per-packet one-way delay: 282.696 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 47.06 Mbit/s
95th percentile per-packet one-way delay: 282.696 ms
Loss rate: 0.89%
```

Run 1: Report of Verus — Data Link

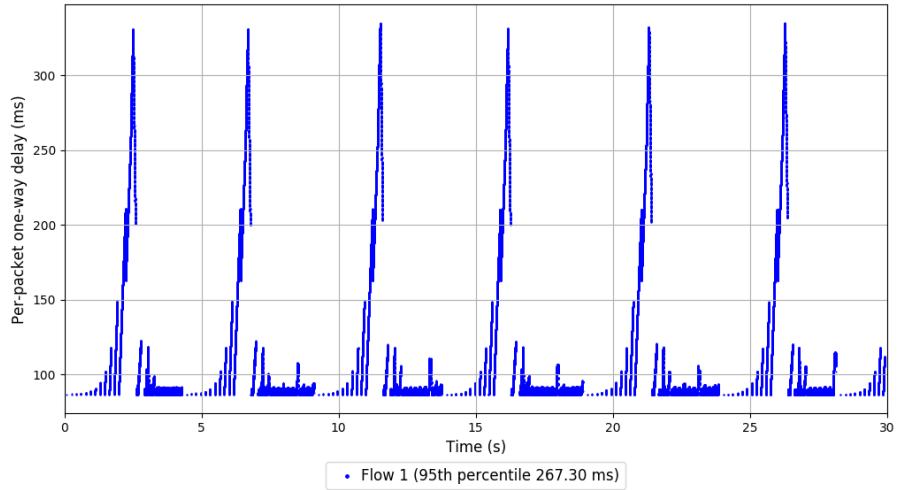
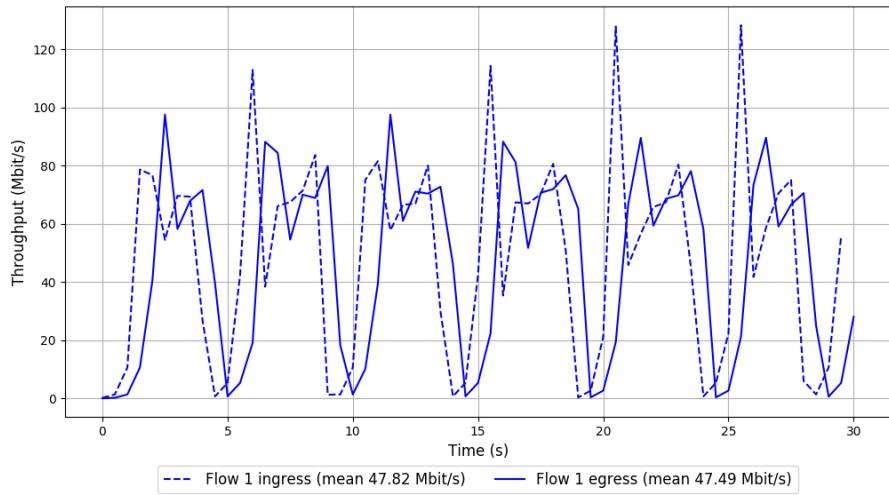


Run 2: Statistics of Verus

```
Start at: 2018-11-15 08:28:25
End at: 2018-11-15 08:28:55
Local clock offset: -6.437 ms
Remote clock offset: 2.362 ms

# Below is generated by plot.py at 2018-11-15 09:51:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.49 Mbit/s
95th percentile per-packet one-way delay: 267.296 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 47.49 Mbit/s
95th percentile per-packet one-way delay: 267.296 ms
Loss rate: 1.25%
```

Run 2: Report of Verus — Data Link

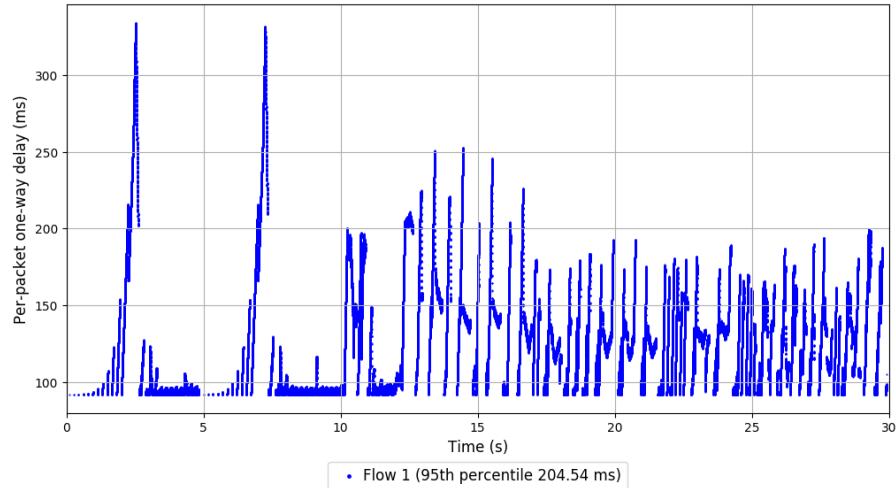
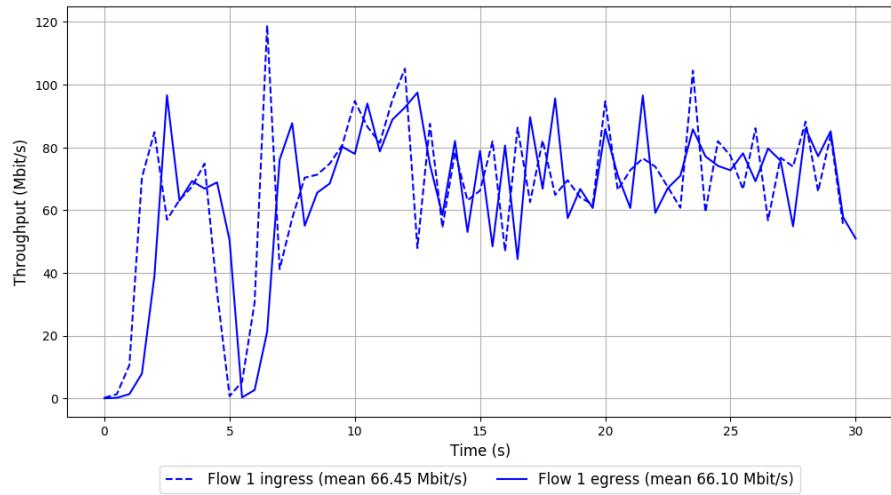


Run 3: Statistics of Verus

```
Start at: 2018-11-15 08:49:47
End at: 2018-11-15 08:50:17
Local clock offset: -1.567 ms
Remote clock offset: -3.731 ms

# Below is generated by plot.py at 2018-11-15 09:51:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.10 Mbit/s
95th percentile per-packet one-way delay: 204.541 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 66.10 Mbit/s
95th percentile per-packet one-way delay: 204.541 ms
Loss rate: 1.04%
```

Run 3: Report of Verus — Data Link

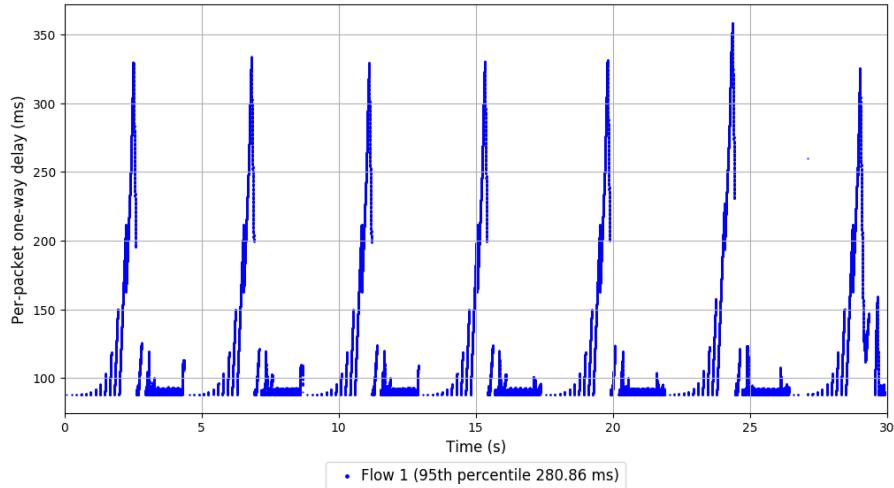
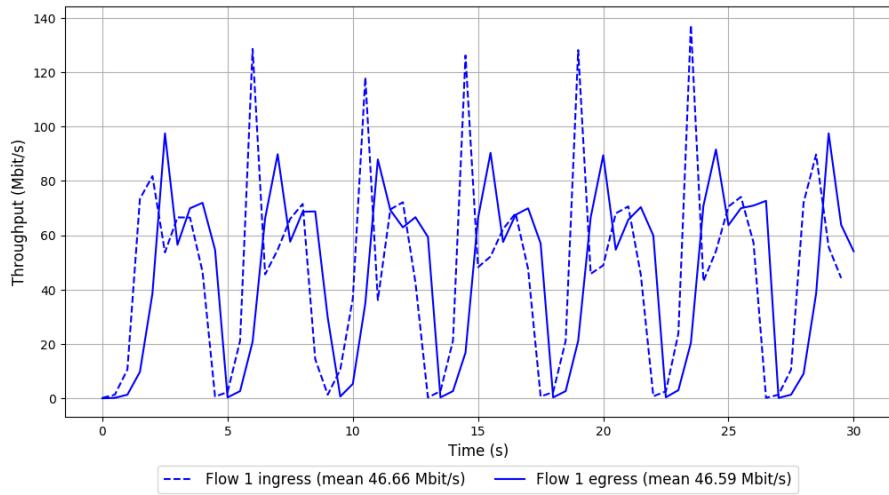


Run 4: Statistics of Verus

```
Start at: 2018-11-15 09:11:07
End at: 2018-11-15 09:11:37
Local clock offset: -6.084 ms
Remote clock offset: -0.253 ms

# Below is generated by plot.py at 2018-11-15 09:51:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.59 Mbit/s
95th percentile per-packet one-way delay: 280.863 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 46.59 Mbit/s
95th percentile per-packet one-way delay: 280.863 ms
Loss rate: 0.40%
```

Run 4: Report of Verus — Data Link

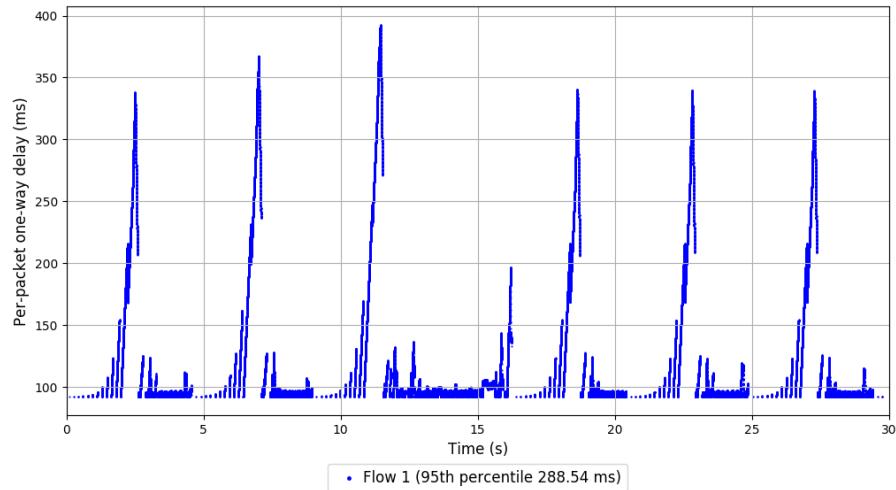
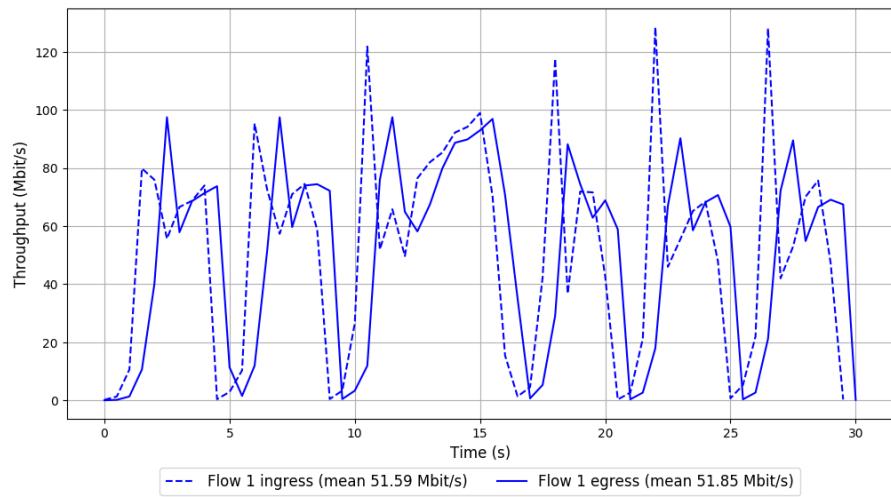


Run 5: Statistics of Verus

```
Start at: 2018-11-15 09:32:34
End at: 2018-11-15 09:33:04
Local clock offset: -7.592 ms
Remote clock offset: -4.571 ms

# Below is generated by plot.py at 2018-11-15 09:51:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.85 Mbit/s
95th percentile per-packet one-way delay: 288.544 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 51.85 Mbit/s
95th percentile per-packet one-way delay: 288.544 ms
Loss rate: 0.07%
```

Run 5: Report of Verus — Data Link

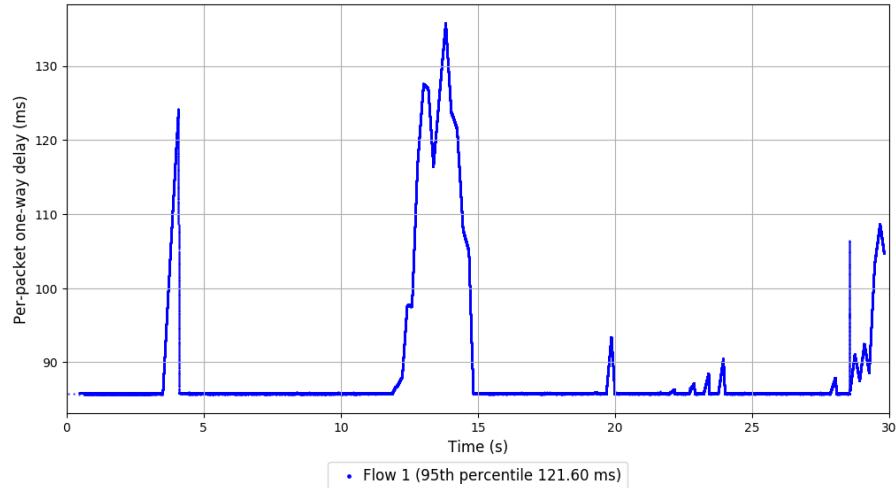
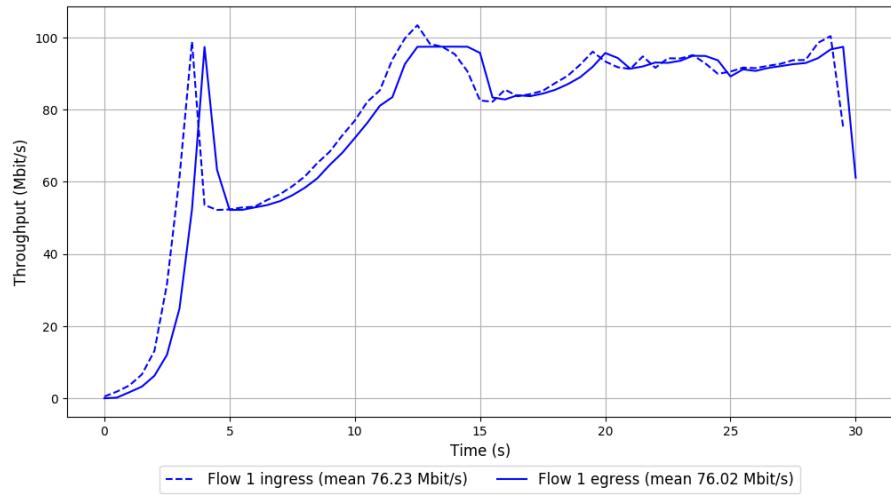


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-11-15 08:12:55
End at: 2018-11-15 08:13:25
Local clock offset: -7.208 ms
Remote clock offset: 4.782 ms

# Below is generated by plot.py at 2018-11-15 09:51:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 76.02 Mbit/s
95th percentile per-packet one-way delay: 121.602 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 76.02 Mbit/s
95th percentile per-packet one-way delay: 121.602 ms
Loss rate: 0.85%
```

Run 1: Report of PCC-Vivace — Data Link

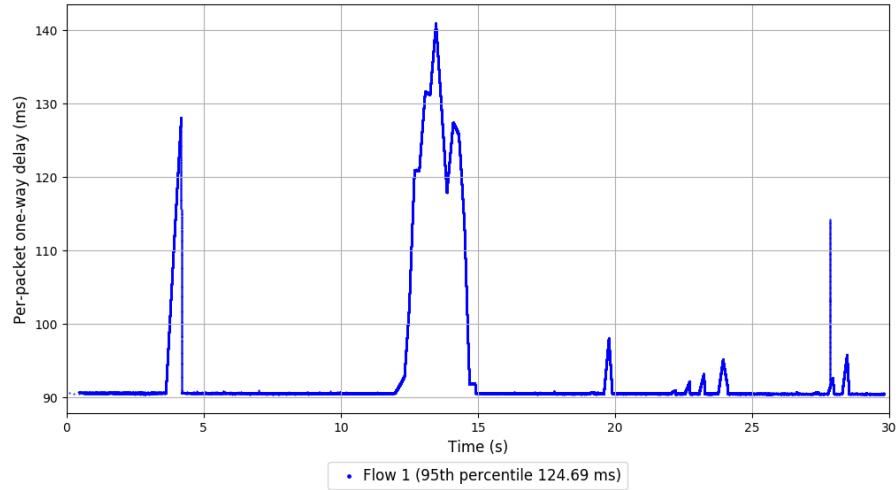
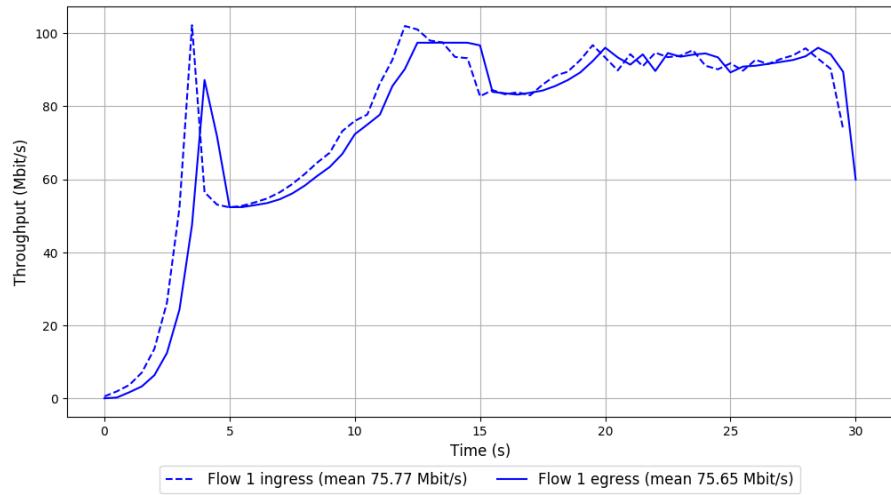


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-11-15 08:34:21
End at: 2018-11-15 08:34:51
Local clock offset: -4.067 ms
Remote clock offset: -1.897 ms

# Below is generated by plot.py at 2018-11-15 09:51:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.65 Mbit/s
95th percentile per-packet one-way delay: 124.694 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 75.65 Mbit/s
95th percentile per-packet one-way delay: 124.694 ms
Loss rate: 0.74%
```

Run 2: Report of PCC-Vivace — Data Link

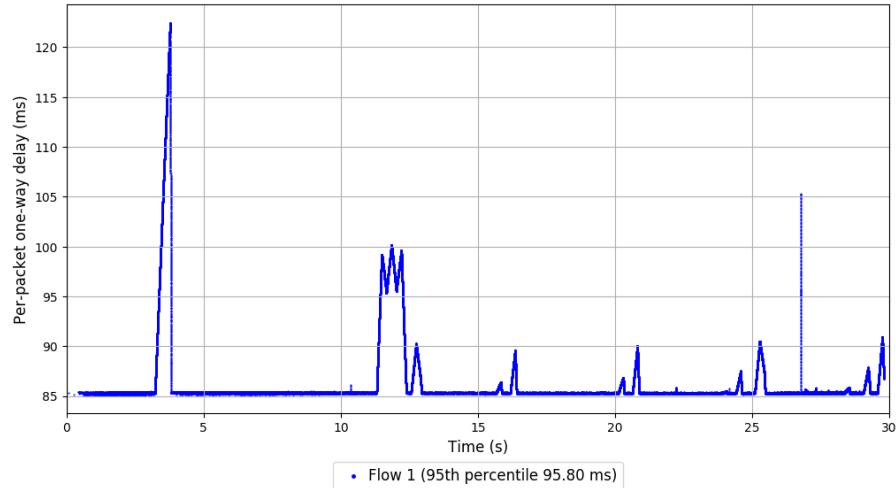
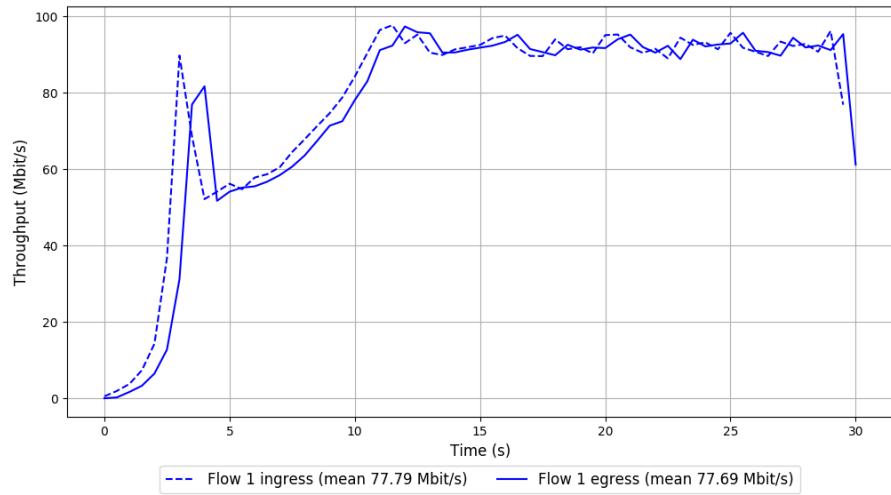


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-11-15 08:55:43
End at: 2018-11-15 08:56:13
Local clock offset: -1.08 ms
Remote clock offset: 2.145 ms

# Below is generated by plot.py at 2018-11-15 09:51:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.69 Mbit/s
95th percentile per-packet one-way delay: 95.795 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 77.69 Mbit/s
95th percentile per-packet one-way delay: 95.795 ms
Loss rate: 0.71%
```

Run 3: Report of PCC-Vivace — Data Link

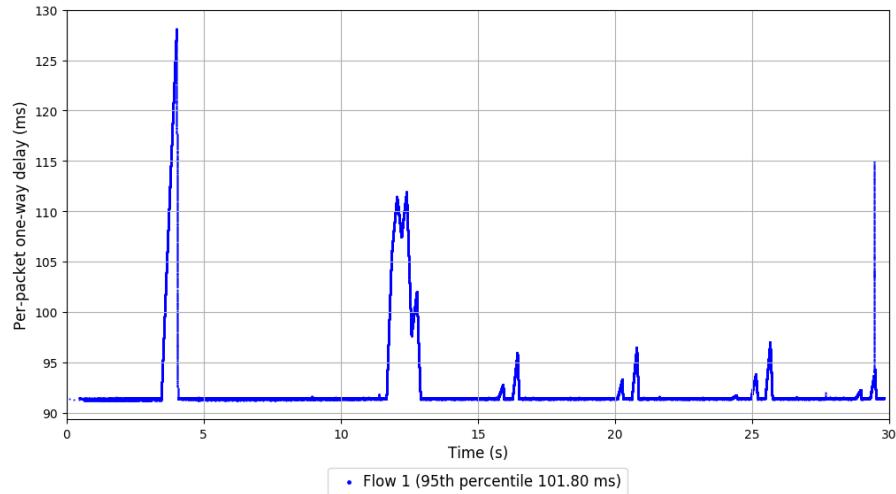
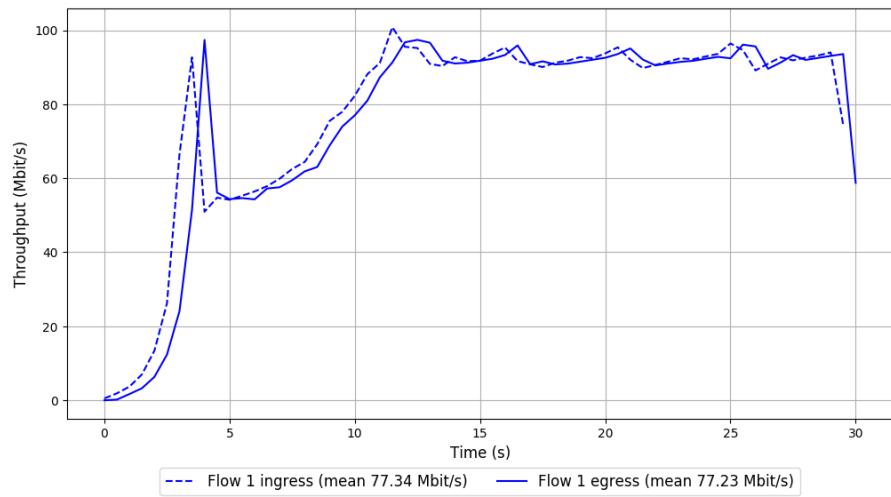


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-11-15 09:17:03
End at: 2018-11-15 09:17:33
Local clock offset: -6.839 ms
Remote clock offset: -4.204 ms

# Below is generated by plot.py at 2018-11-15 09:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.23 Mbit/s
95th percentile per-packet one-way delay: 101.797 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 77.23 Mbit/s
95th percentile per-packet one-way delay: 101.797 ms
Loss rate: 0.72%
```

Run 4: Report of PCC-Vivace — Data Link

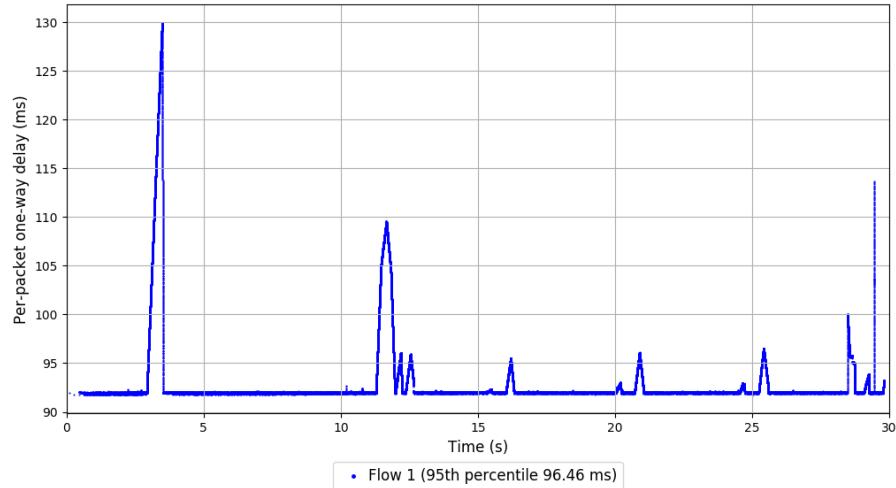
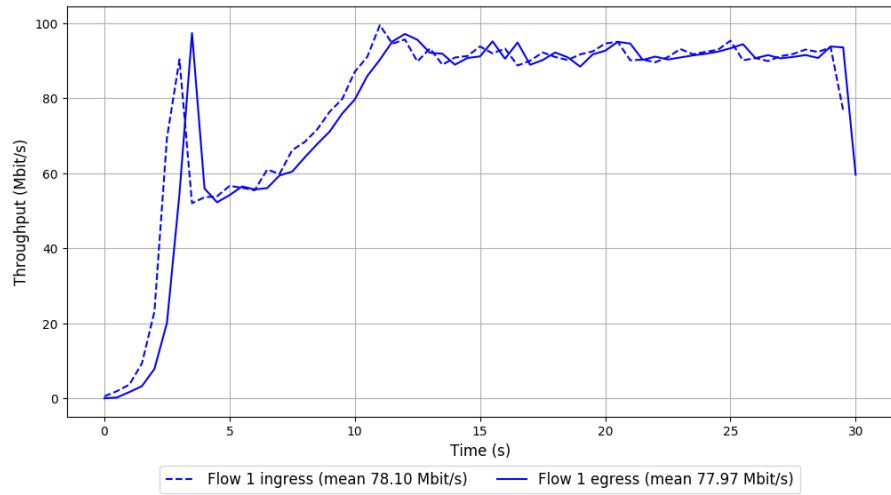


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-11-15 09:38:29
End at: 2018-11-15 09:38:59
Local clock offset: -7.784 ms
Remote clock offset: -4.821 ms

# Below is generated by plot.py at 2018-11-15 09:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.97 Mbit/s
95th percentile per-packet one-way delay: 96.462 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 77.97 Mbit/s
95th percentile per-packet one-way delay: 96.462 ms
Loss rate: 0.74%
```

Run 5: Report of PCC-Vivace — Data Link

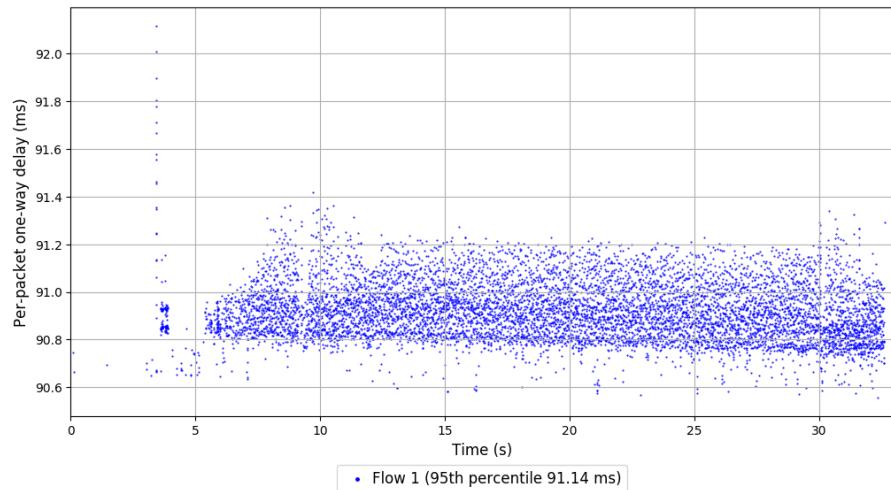
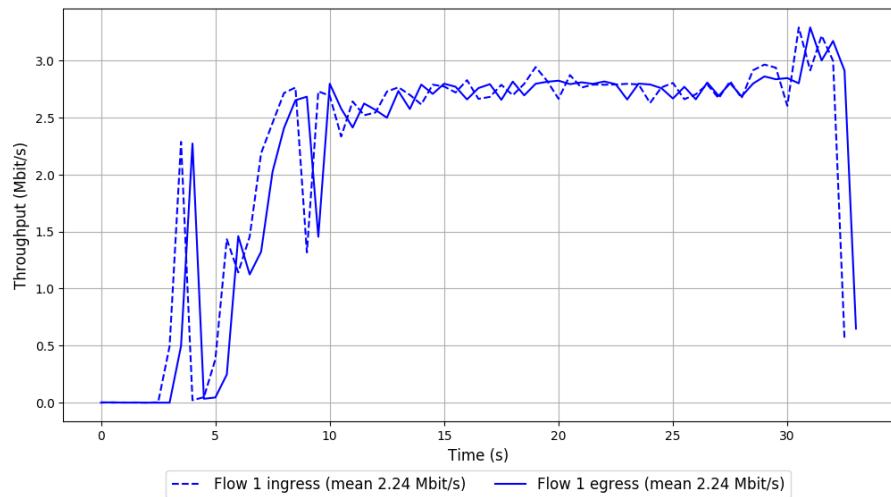


```
Run 1: Statistics of WebRTC media

Start at: 2018-11-15 07:57:34
End at: 2018-11-15 07:58:04
Local clock offset: -7.526 ms
Remote clock offset: 1.556 ms

# Below is generated by plot.py at 2018-11-15 09:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 91.141 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 91.141 ms
Loss rate: 0.33%
```

Run 1: Report of WebRTC media — Data Link

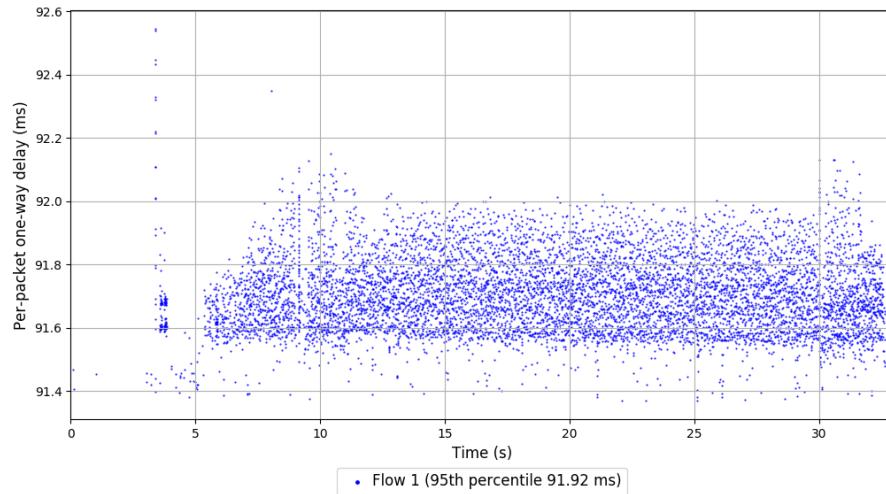
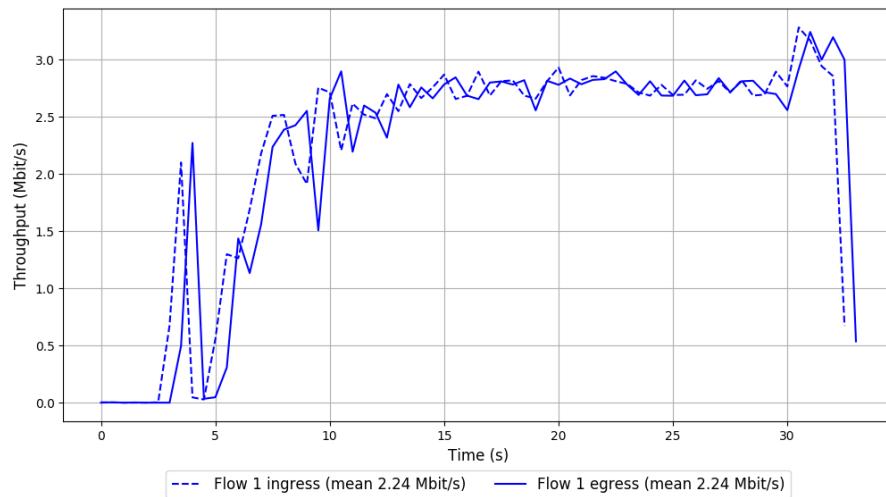


Run 2: Statistics of WebRTC media

```
Start at: 2018-11-15 08:18:54
End at: 2018-11-15 08:19:24
Local clock offset: -7.233 ms
Remote clock offset: -1.669 ms

# Below is generated by plot.py at 2018-11-15 09:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 91.919 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 91.919 ms
Loss rate: 0.40%
```

Run 2: Report of WebRTC media — Data Link

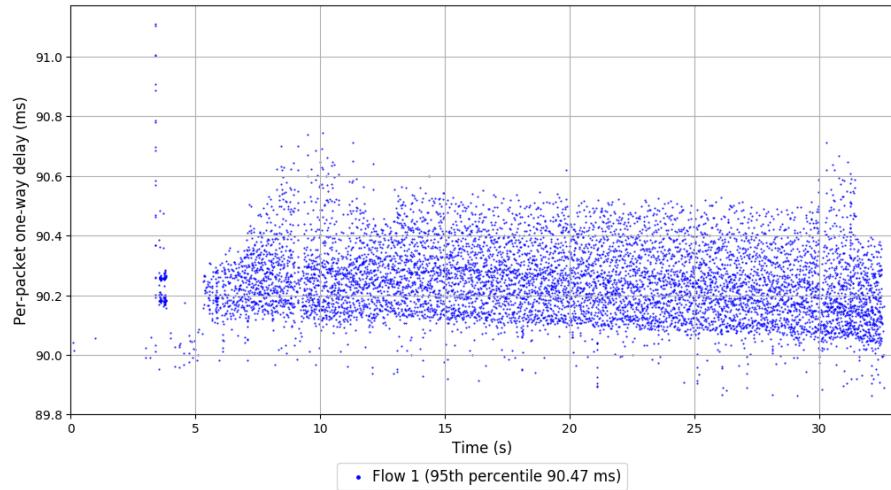
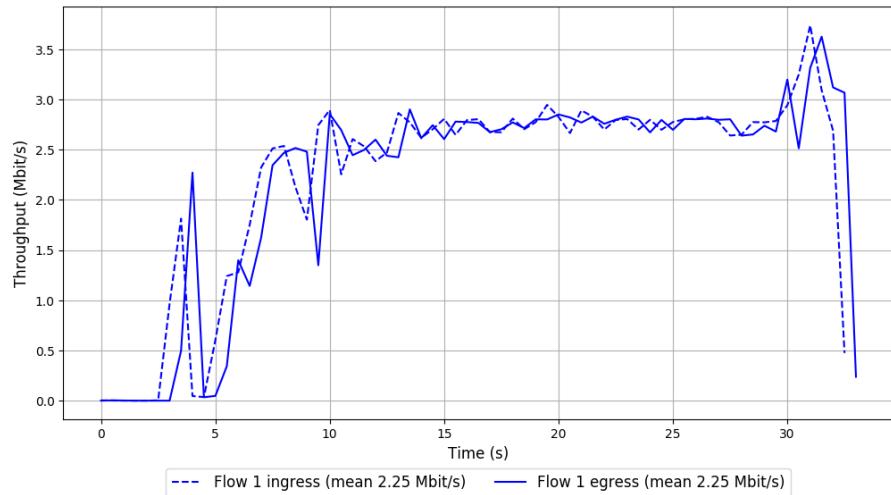


Run 3: Statistics of WebRTC media

```
Start at: 2018-11-15 08:40:20
End at: 2018-11-15 08:40:50
Local clock offset: -2.719 ms
Remote clock offset: -2.272 ms

# Below is generated by plot.py at 2018-11-15 09:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 90.470 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 90.470 ms
Loss rate: 0.32%
```

Run 3: Report of WebRTC media — Data Link

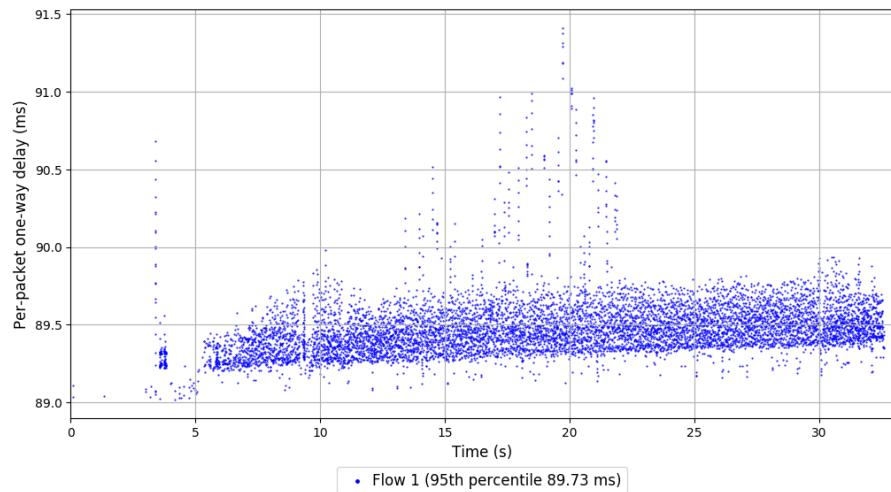
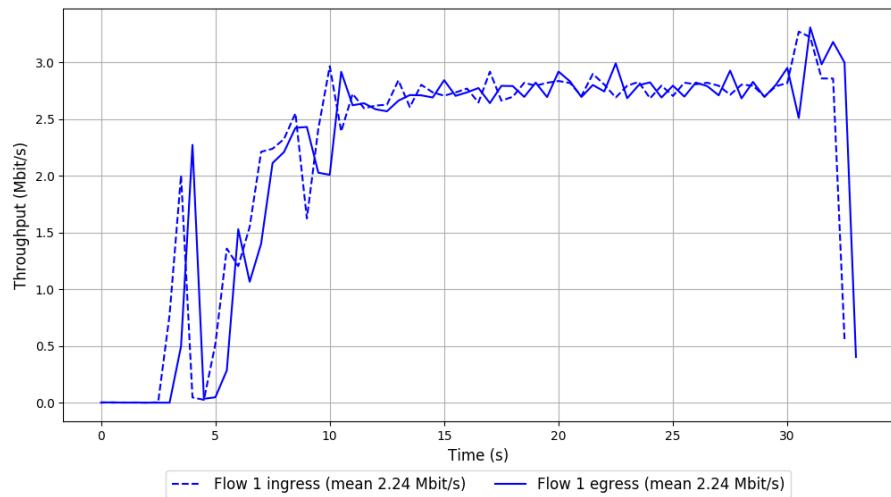


Run 4: Statistics of WebRTC media

```
Start at: 2018-11-15 09:01:41
End at: 2018-11-15 09:02:11
Local clock offset: -2.892 ms
Remote clock offset: -0.171 ms

# Below is generated by plot.py at 2018-11-15 09:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 89.734 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 89.734 ms
Loss rate: 0.35%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-11-15 09:23:01
End at: 2018-11-15 09:23:31
Local clock offset: -7.273 ms
Remote clock offset: 0.536 ms

# Below is generated by plot.py at 2018-11-15 09:51:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 87.392 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 87.392 ms
Loss rate: 0.33%
```

Run 5: Report of WebRTC media — Data Link

