

Pantheon Report

Generated at 2018-11-15 04:08:30 (UTC).
Data path: AWS California 2 on `ens5` (*local*) → Mexico on `em1` (*remote*).
Repeated the test of 18 congestion control schemes 5 times.
Each test lasted for 30 seconds running 1 flow.
NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.

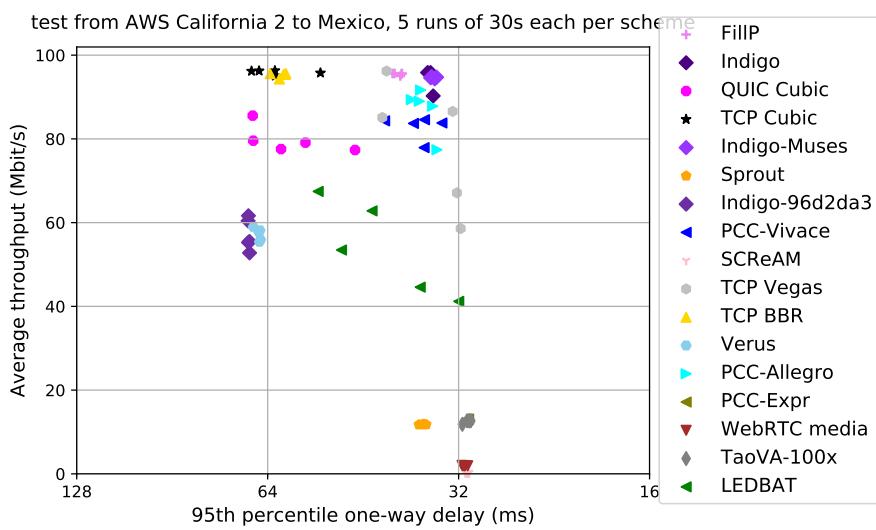
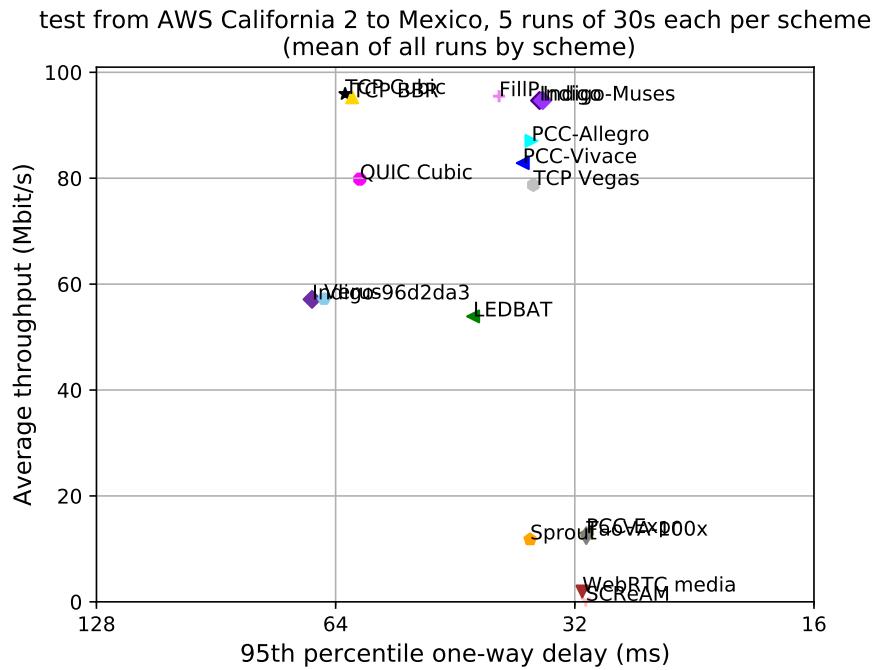
System info:

```
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



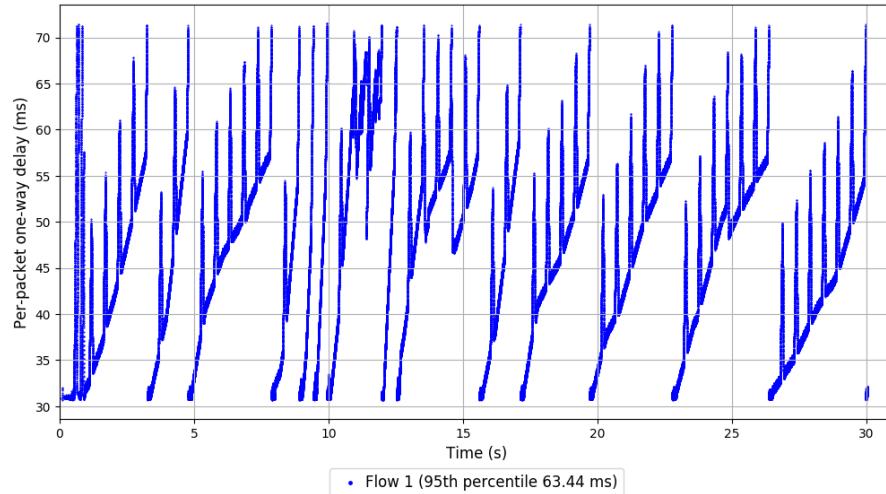
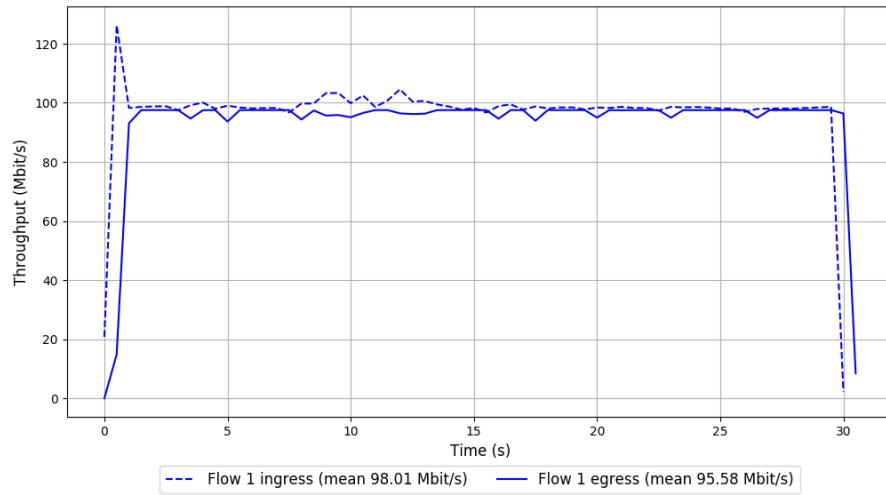
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	95.28	61.01	1.94
Copa	0	N/A	N/A	N/A
TCP Cubic	5	95.91	62.26	0.46
FillP	5	95.49	39.85	0.68
Indigo	5	94.67	35.44	0.01
Indigo-96d2da3	5	57.12	68.53	58.26
LEDBAT	5	53.90	42.97	0.02
Indigo-Muses	5	94.67	35.12	0.20
PCC-Allegro	5	87.05	36.28	0.75
PCC-Expr	5	12.99	30.96	45.57
QUIC Cubic	5	79.83	59.67	1.46
SCReAM	5	0.21	31.00	0.00
Sprout	5	11.79	36.42	0.04
TaoVA-100x	5	12.51	30.96	60.82
TCP Vegas	5	78.72	36.09	0.57
Verus	5	57.25	66.18	26.78
PCC-Vivace	5	82.86	37.21	0.00
WebRTC media	5	1.95	31.32	0.00

Run 1: Statistics of TCP BBR

```
Start at: 2018-11-15 02:06:09
End at: 2018-11-15 02:06:39
Local clock offset: 1.487 ms
Remote clock offset: -4.022 ms

# Below is generated by plot.py at 2018-11-15 04:00:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.58 Mbit/s
95th percentile per-packet one-way delay: 63.440 ms
Loss rate: 2.48%
-- Flow 1:
Average throughput: 95.58 Mbit/s
95th percentile per-packet one-way delay: 63.440 ms
Loss rate: 2.48%
```

Run 1: Report of TCP BBR — Data Link

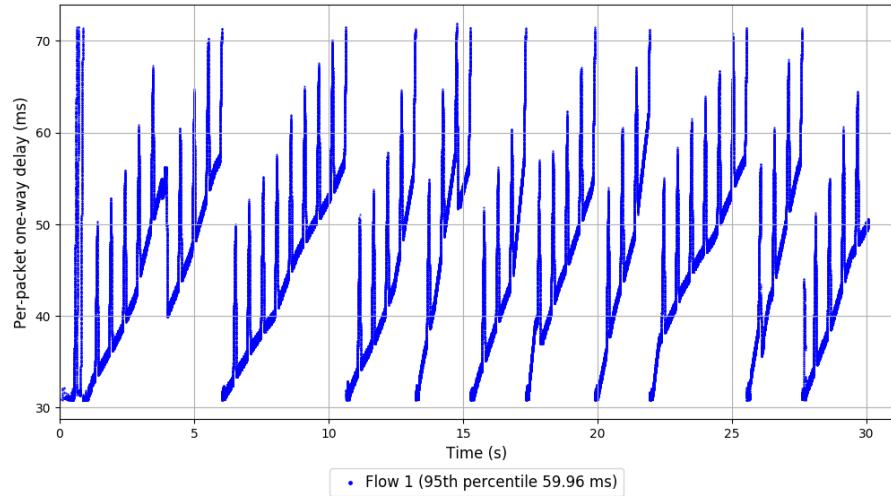
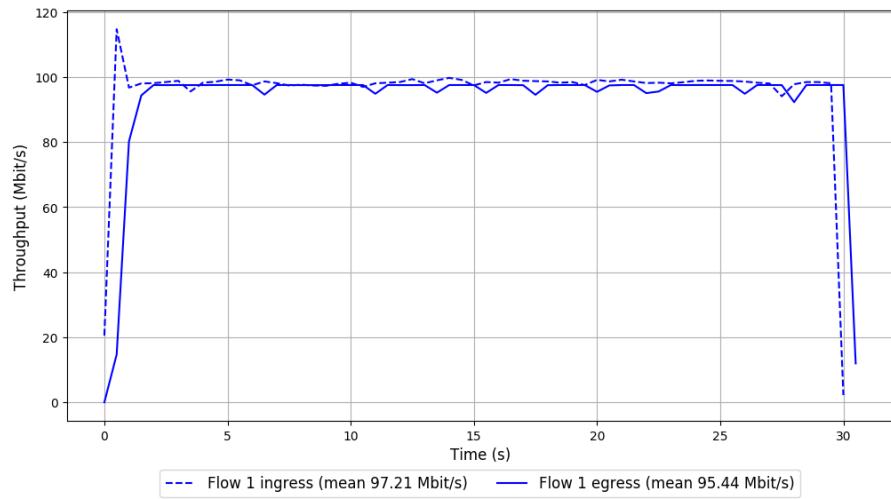


Run 2: Statistics of TCP BBR

```
Start at: 2018-11-15 02:31:26
End at: 2018-11-15 02:31:56
Local clock offset: 2.906 ms
Remote clock offset: -3.48 ms

# Below is generated by plot.py at 2018-11-15 04:00:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.44 Mbit/s
95th percentile per-packet one-way delay: 59.959 ms
Loss rate: 1.75%
-- Flow 1:
Average throughput: 95.44 Mbit/s
95th percentile per-packet one-way delay: 59.959 ms
Loss rate: 1.75%
```

Run 2: Report of TCP BBR — Data Link

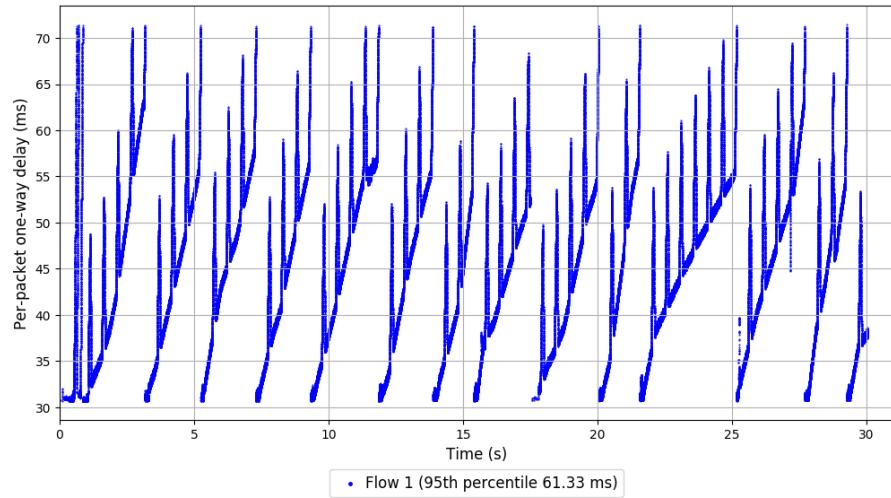
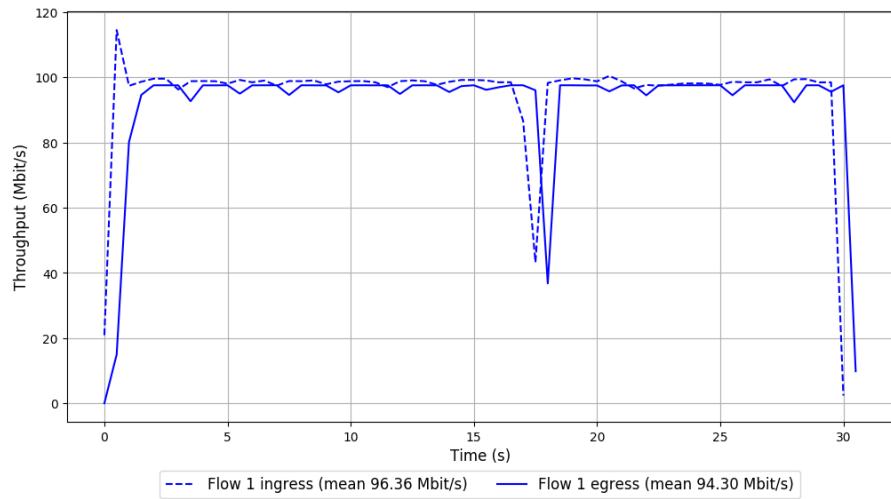


Run 3: Statistics of TCP BBR

```
Start at: 2018-11-15 02:55:35
End at: 2018-11-15 02:56:05
Local clock offset: 5.374 ms
Remote clock offset: -3.328 ms

# Below is generated by plot.py at 2018-11-15 04:00:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.30 Mbit/s
95th percentile per-packet one-way delay: 61.330 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 94.30 Mbit/s
95th percentile per-packet one-way delay: 61.330 ms
Loss rate: 2.11%
```

Run 3: Report of TCP BBR — Data Link

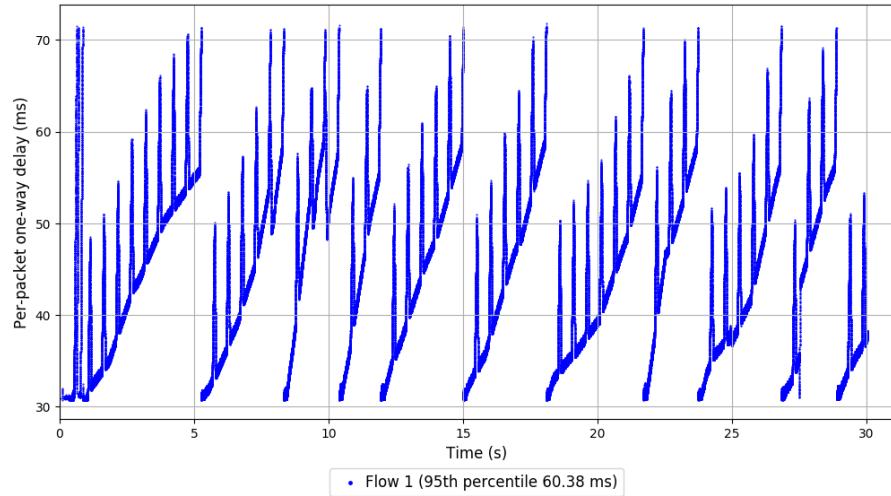
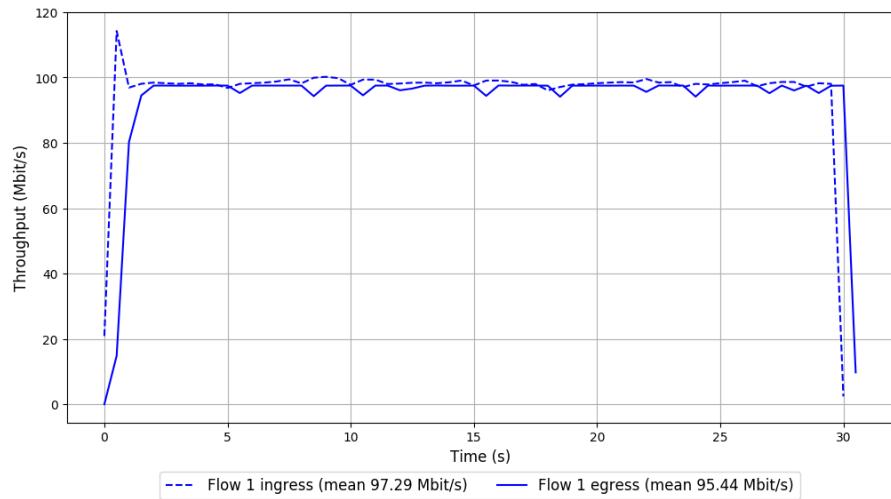


Run 4: Statistics of TCP BBR

```
Start at: 2018-11-15 03:19:48
End at: 2018-11-15 03:20:18
Local clock offset: 2.688 ms
Remote clock offset: -2.749 ms

# Below is generated by plot.py at 2018-11-15 04:00:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.44 Mbit/s
95th percentile per-packet one-way delay: 60.376 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 95.44 Mbit/s
95th percentile per-packet one-way delay: 60.376 ms
Loss rate: 1.88%
```

Run 4: Report of TCP BBR — Data Link

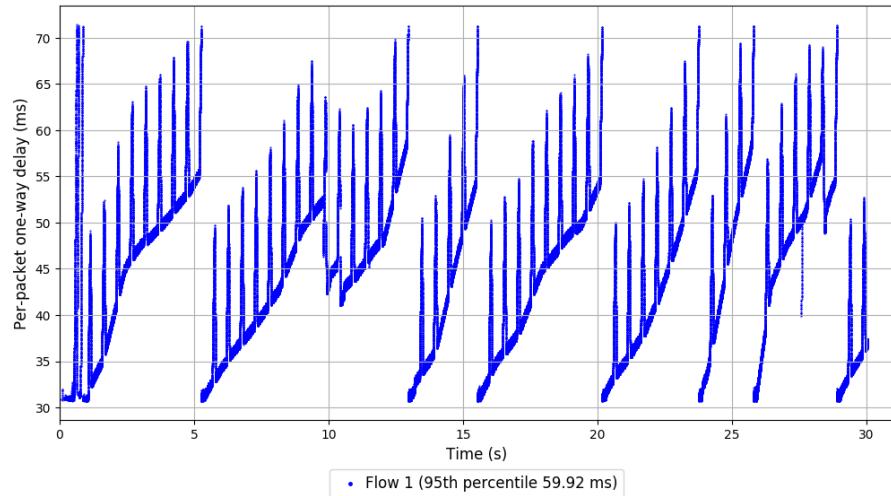
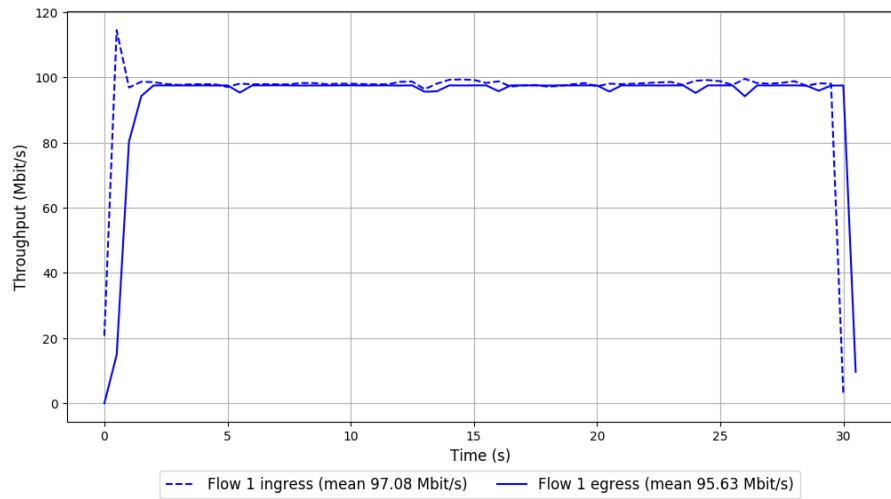


Run 5: Statistics of TCP BBR

```
Start at: 2018-11-15 03:43:31
End at: 2018-11-15 03:44:01
Local clock offset: 1.322 ms
Remote clock offset: -2.236 ms

# Below is generated by plot.py at 2018-11-15 04:00:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.63 Mbit/s
95th percentile per-packet one-way delay: 59.922 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 95.63 Mbit/s
95th percentile per-packet one-way delay: 59.922 ms
Loss rate: 1.47%
```

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

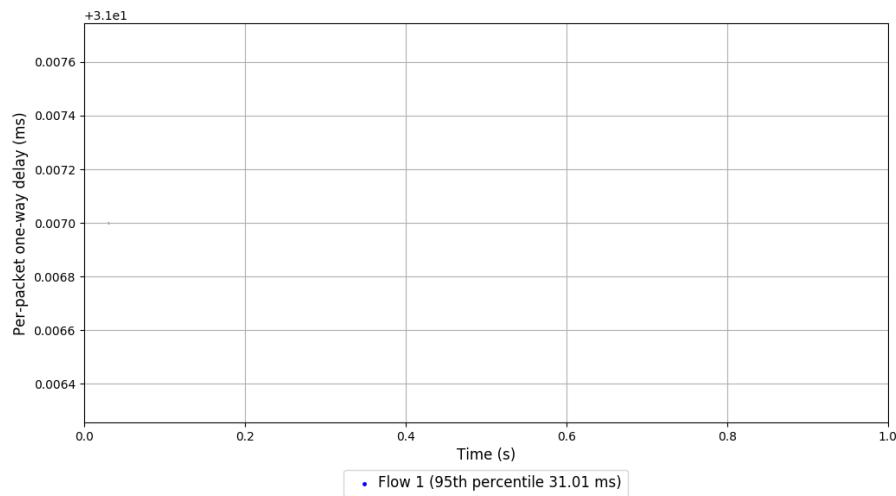
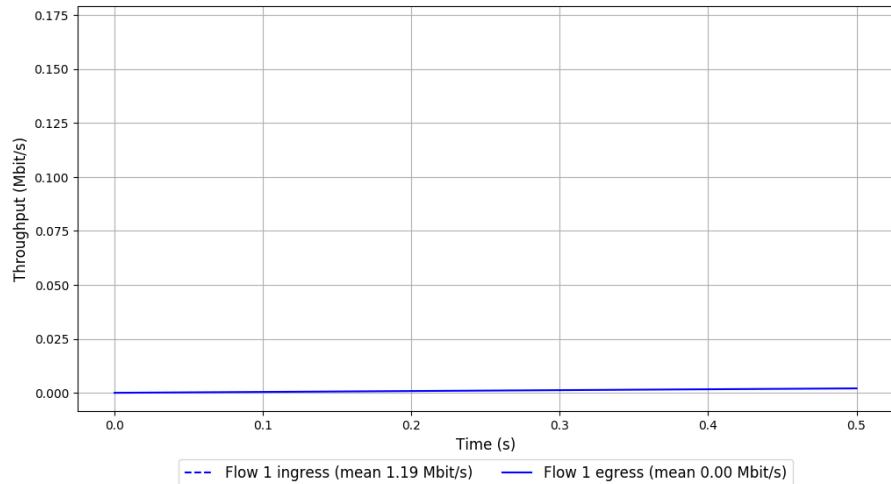
Start at: 2018-11-15 02:12:13

End at: 2018-11-15 02:12:43

Local clock offset: 2.589 ms

Remote clock offset: -3.87 ms

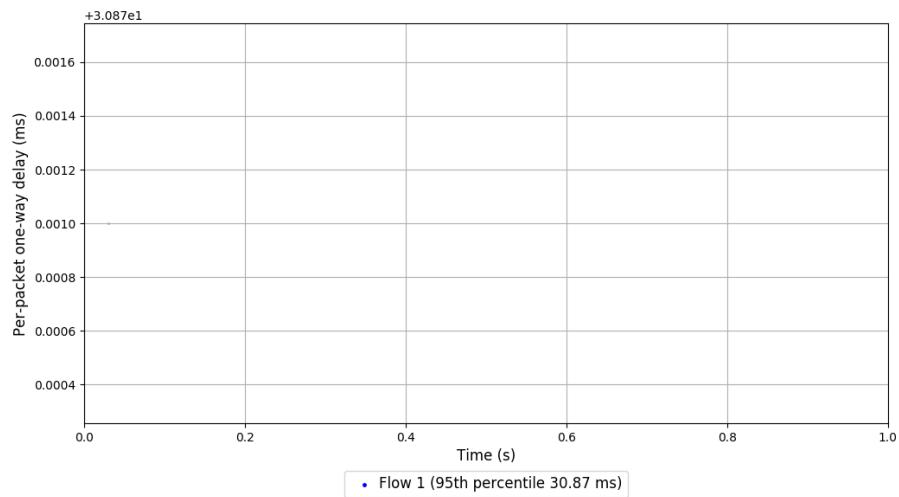
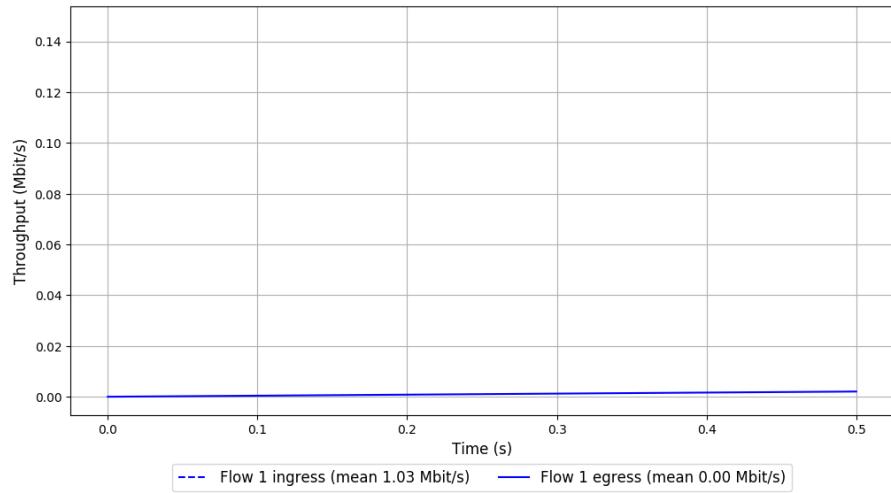
Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-11-15 02:36:44
End at: 2018-11-15 02:37:14
Local clock offset: 3.033 ms
Remote clock offset: -3.534 ms

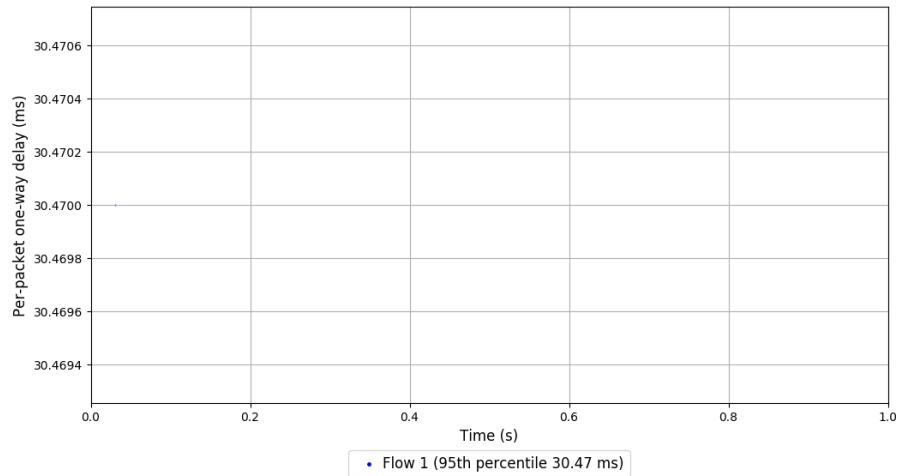
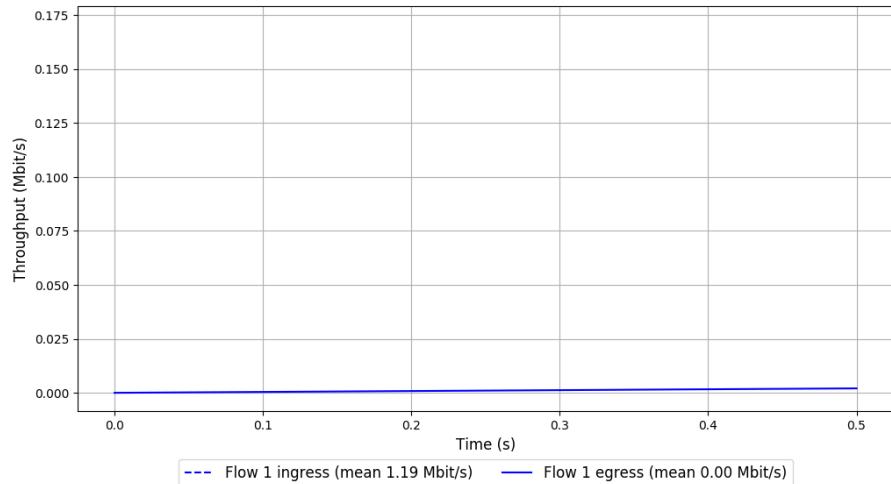
Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-11-15 03:01:04
End at: 2018-11-15 03:01:34
Local clock offset: 3.988 ms
Remote clock offset: -3.247 ms

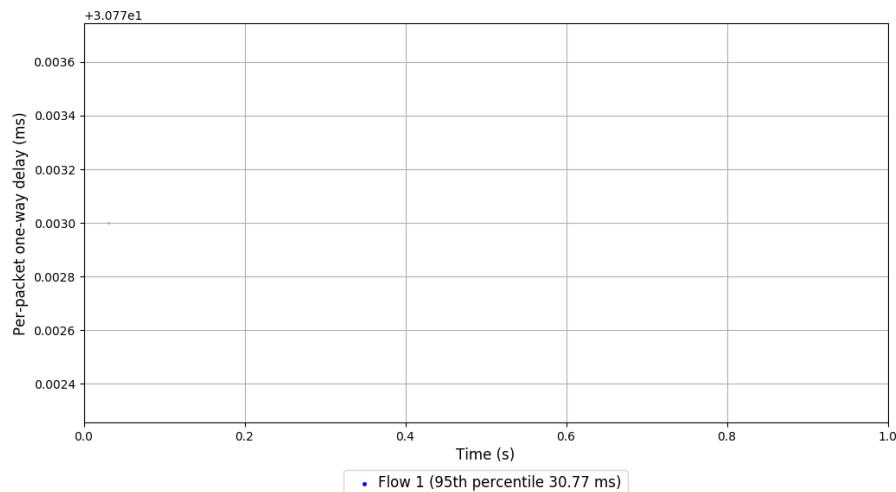
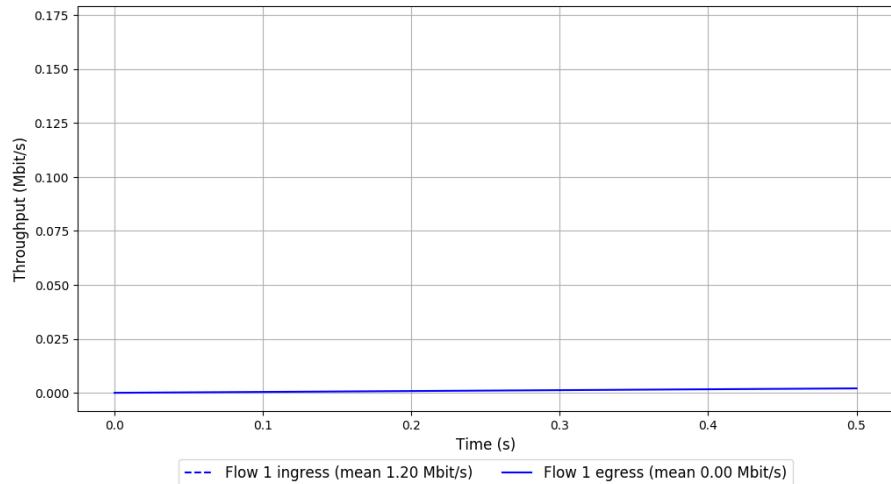
Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-11-15 03:25:08
End at: 2018-11-15 03:25:38
Local clock offset: 3.011 ms
Remote clock offset: -2.835 ms

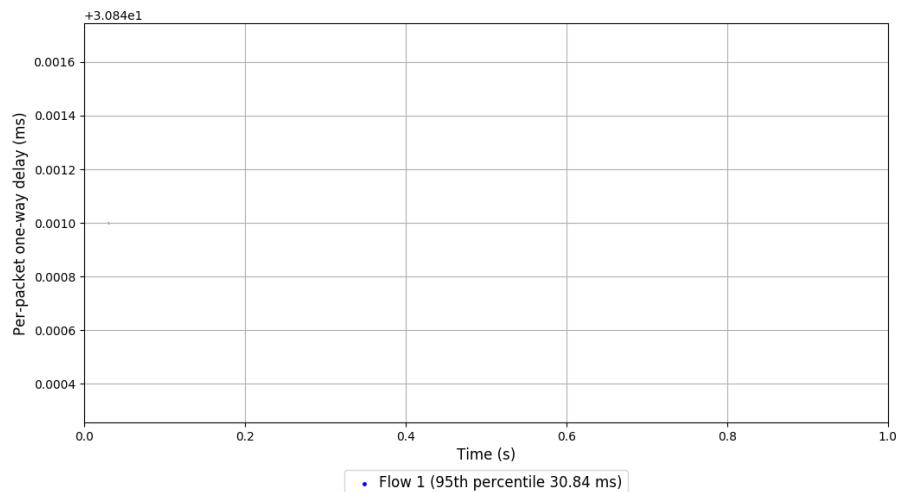
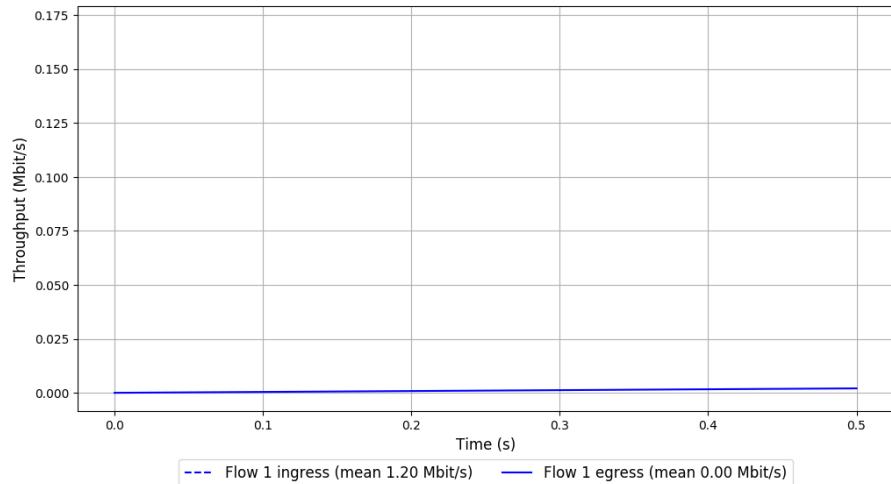
Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-11-15 03:48:46
End at: 2018-11-15 03:49:16
Local clock offset: 1.402 ms
Remote clock offset: -1.982 ms

Run 5: Report of Copa — Data Link

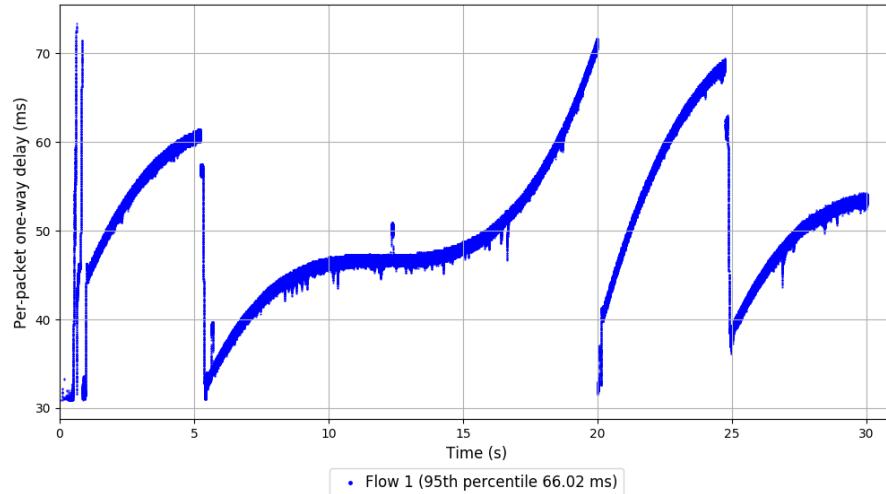
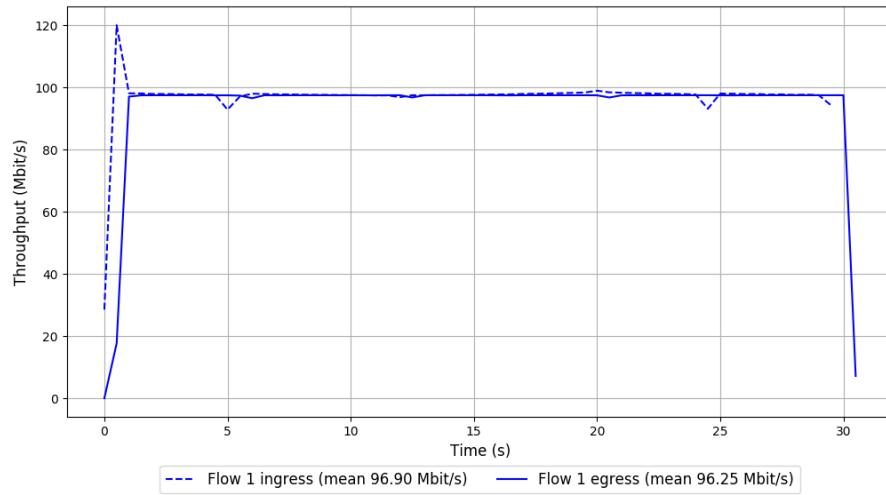


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-11-15 01:59:07
End at: 2018-11-15 01:59:37
Local clock offset: 0.888 ms
Remote clock offset: -4.144 ms

# Below is generated by plot.py at 2018-11-15 04:00:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.25 Mbit/s
95th percentile per-packet one-way delay: 66.024 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 96.25 Mbit/s
95th percentile per-packet one-way delay: 66.024 ms
Loss rate: 0.60%
```

Run 1: Report of TCP Cubic — Data Link

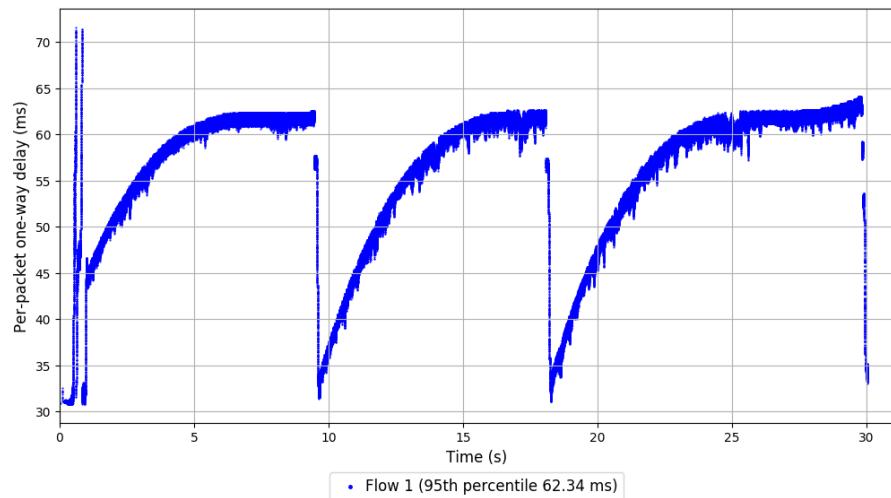
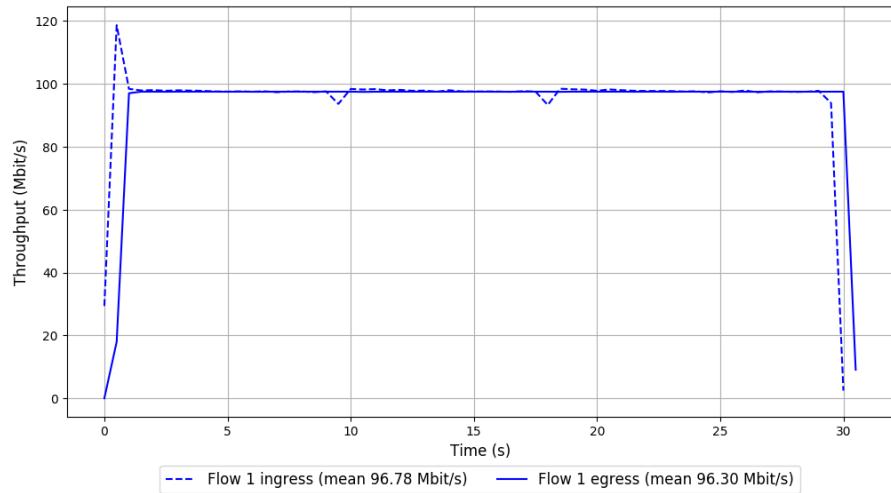


Run 2: Statistics of TCP Cubic

```
Start at: 2018-11-15 02:24:42
End at: 2018-11-15 02:25:12
Local clock offset: 2.96 ms
Remote clock offset: -3.67 ms

# Below is generated by plot.py at 2018-11-15 04:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 62.341 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 62.341 ms
Loss rate: 0.49%
```

Run 2: Report of TCP Cubic — Data Link

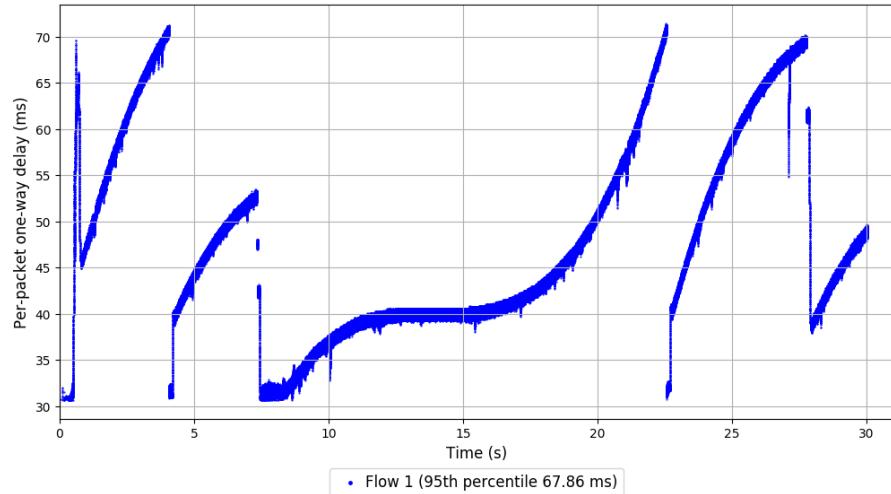
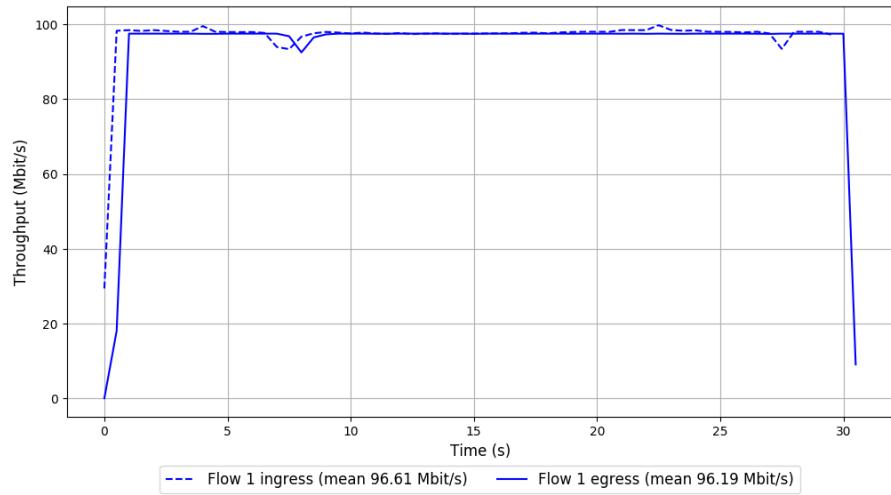


Run 3: Statistics of TCP Cubic

```
Start at: 2018-11-15 02:48:47
End at: 2018-11-15 02:49:17
Local clock offset: 4.393 ms
Remote clock offset: -3.445 ms

# Below is generated by plot.py at 2018-11-15 04:00:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.19 Mbit/s
95th percentile per-packet one-way delay: 67.863 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 96.19 Mbit/s
95th percentile per-packet one-way delay: 67.863 ms
Loss rate: 0.38%
```

Run 3: Report of TCP Cubic — Data Link

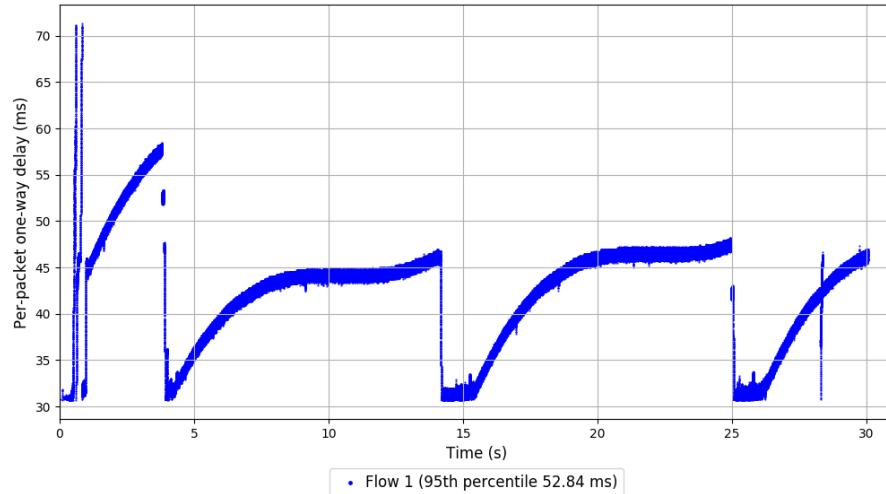
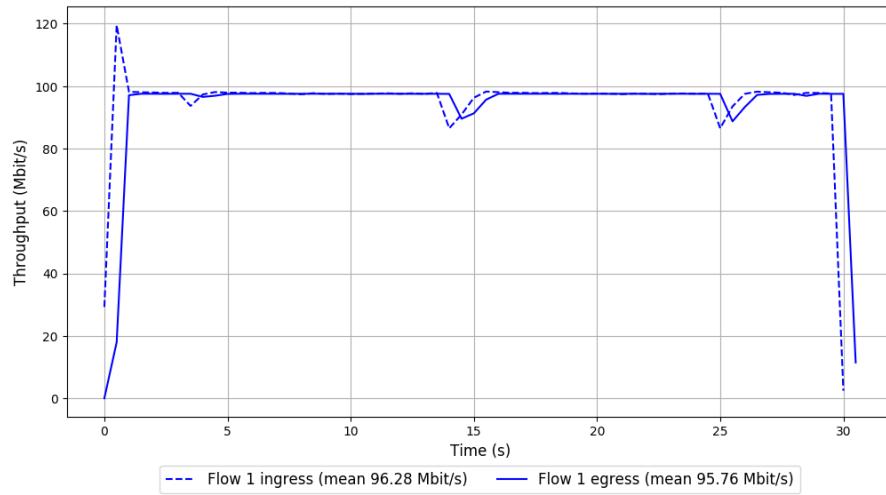


Run 4: Statistics of TCP Cubic

```
Start at: 2018-11-15 03:13:09
End at: 2018-11-15 03:13:39
Local clock offset: 2.53 ms
Remote clock offset: -2.804 ms

# Below is generated by plot.py at 2018-11-15 04:02:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.76 Mbit/s
95th percentile per-packet one-way delay: 52.835 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 95.76 Mbit/s
95th percentile per-packet one-way delay: 52.835 ms
Loss rate: 0.49%
```

Run 4: Report of TCP Cubic — Data Link

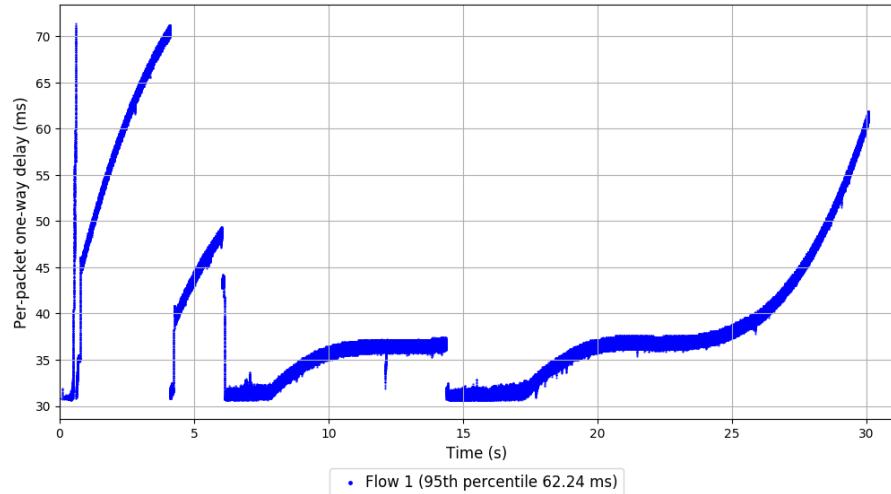
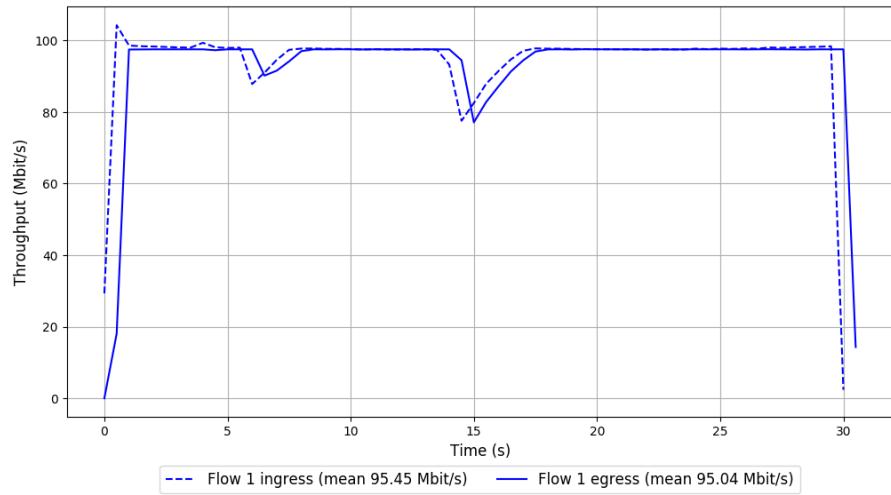


Run 5: Statistics of TCP Cubic

```
Start at: 2018-11-15 03:36:57
End at: 2018-11-15 03:37:27
Local clock offset: 1.482 ms
Remote clock offset: -2.522 ms

# Below is generated by plot.py at 2018-11-15 04:02:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 62.236 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 62.236 ms
Loss rate: 0.33%
```

Run 5: Report of TCP Cubic — Data Link

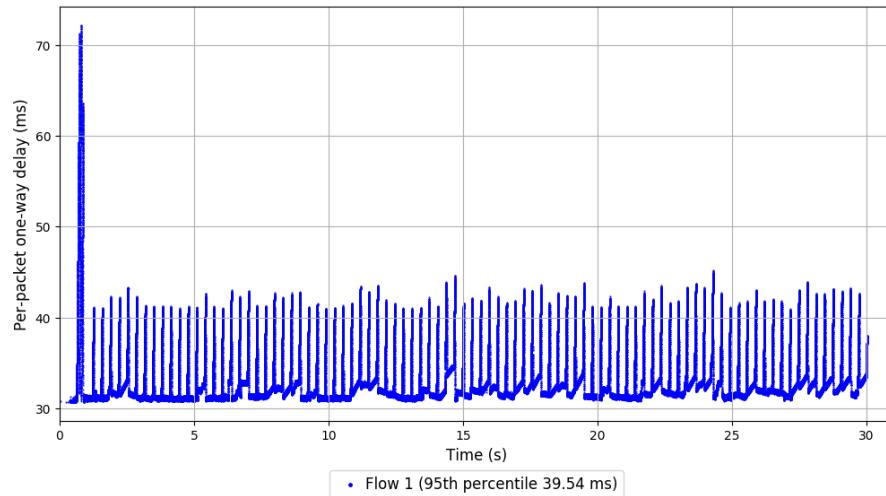
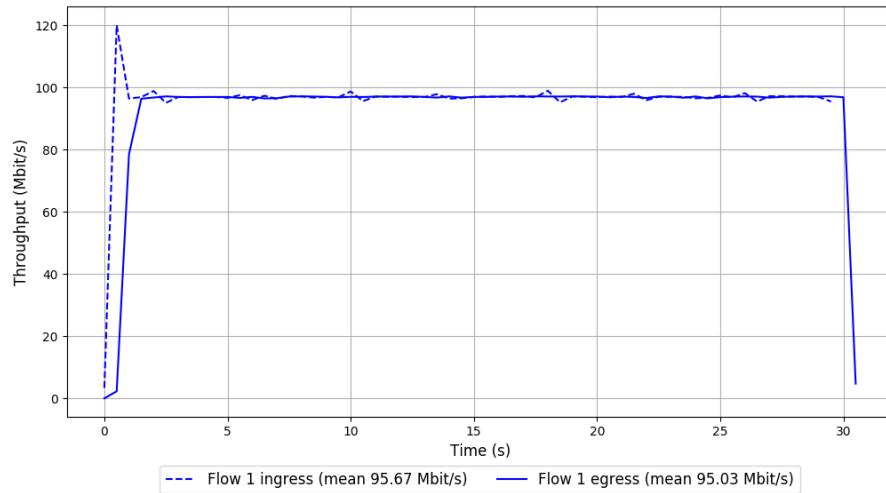


```
Run 1: Statistics of FillP

Start at: 2018-11-15 02:08:10
End at: 2018-11-15 02:08:40
Local clock offset: 1.659 ms
Remote clock offset: -3.961 ms

# Below is generated by plot.py at 2018-11-15 04:02:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.03 Mbit/s
95th percentile per-packet one-way delay: 39.540 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 95.03 Mbit/s
95th percentile per-packet one-way delay: 39.540 ms
Loss rate: 0.64%
```

Run 1: Report of FillP — Data Link

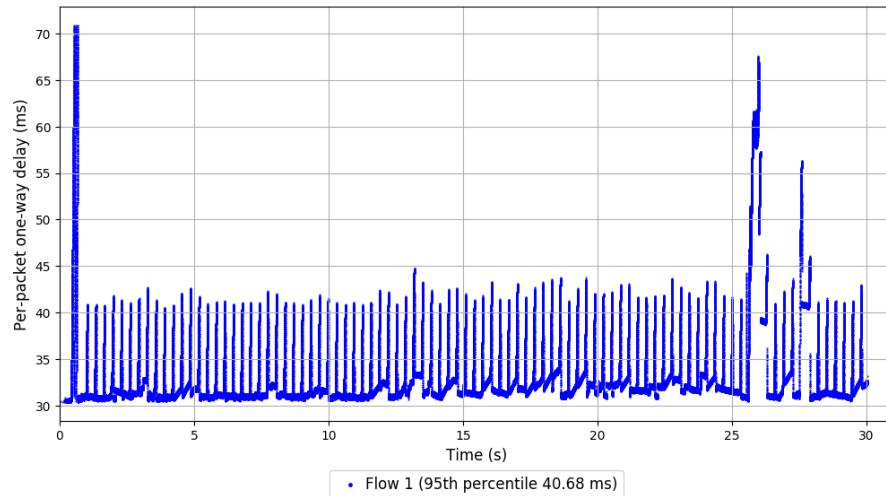
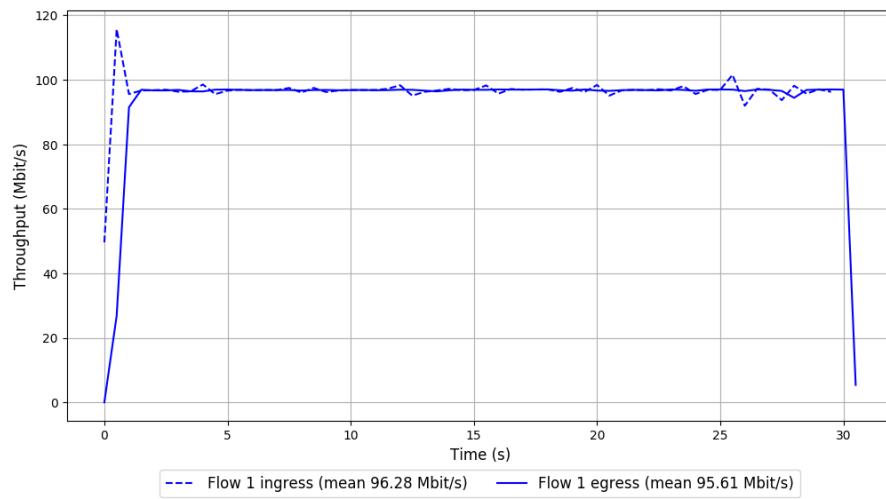


Run 2: Statistics of FillP

```
Start at: 2018-11-15 02:32:47
End at: 2018-11-15 02:33:17
Local clock offset: 2.883 ms
Remote clock offset: -3.818 ms

# Below is generated by plot.py at 2018-11-15 04:02:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.61 Mbit/s
95th percentile per-packet one-way delay: 40.676 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 95.61 Mbit/s
95th percentile per-packet one-way delay: 40.676 ms
Loss rate: 0.69%
```

Run 2: Report of FillP — Data Link

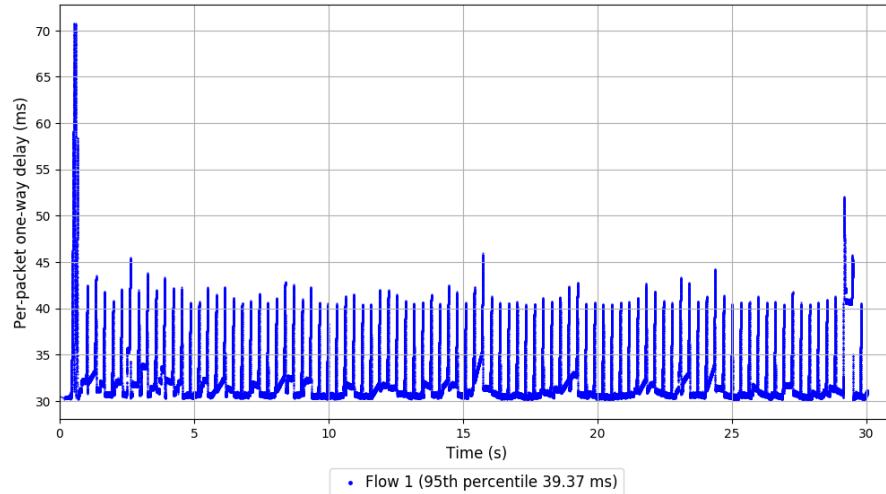
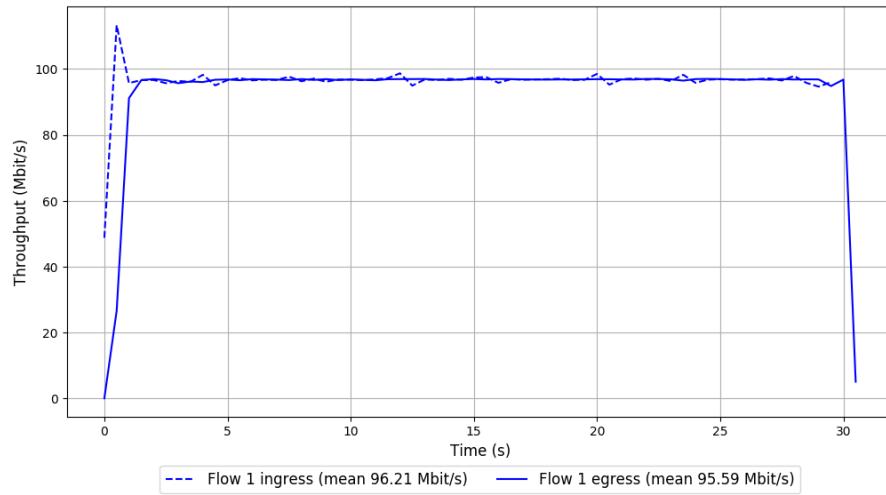


Run 3: Statistics of FillP

```
Start at: 2018-11-15 02:57:00
End at: 2018-11-15 02:57:30
Local clock offset: 5.636 ms
Remote clock offset: -3.13 ms

# Below is generated by plot.py at 2018-11-15 04:02:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 39.367 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 39.367 ms
Loss rate: 0.64%
```

Run 3: Report of FillP — Data Link

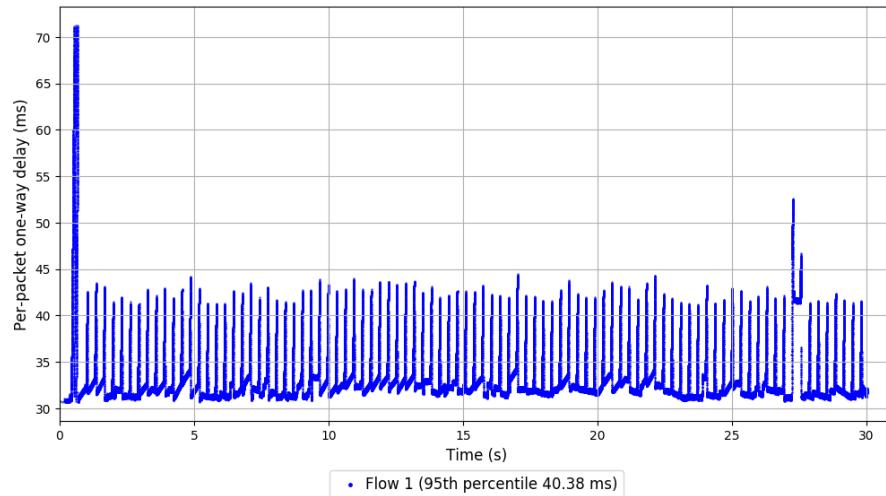
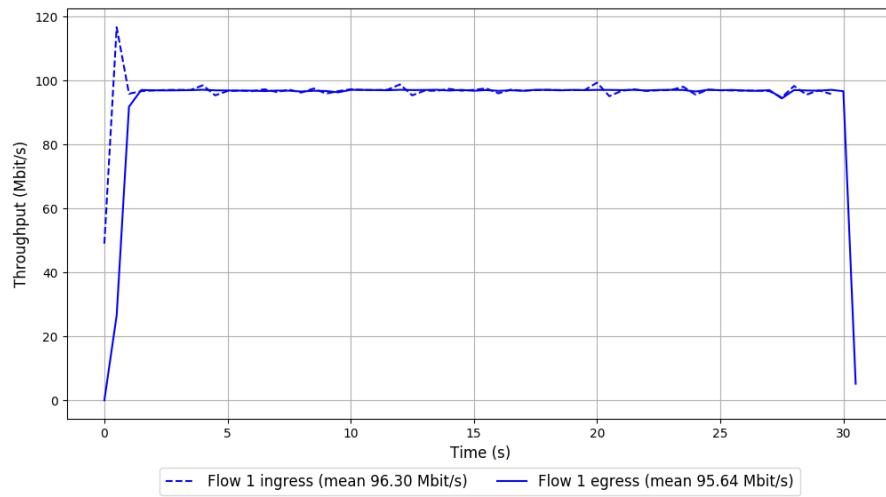


Run 4: Statistics of FillP

```
Start at: 2018-11-15 03:21:10
End at: 2018-11-15 03:21:40
Local clock offset: 2.761 ms
Remote clock offset: -2.668 ms

# Below is generated by plot.py at 2018-11-15 04:02:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.64 Mbit/s
95th percentile per-packet one-way delay: 40.375 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 95.64 Mbit/s
95th percentile per-packet one-way delay: 40.375 ms
Loss rate: 0.69%
```

Run 4: Report of FillP — Data Link

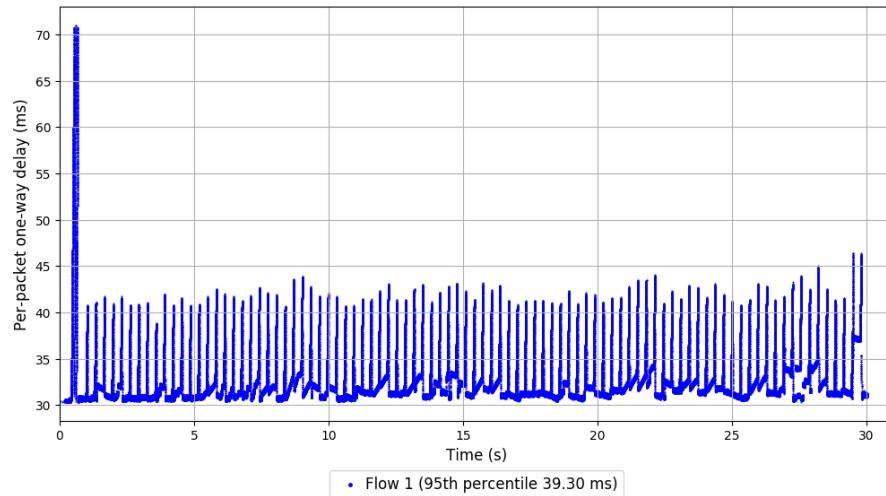
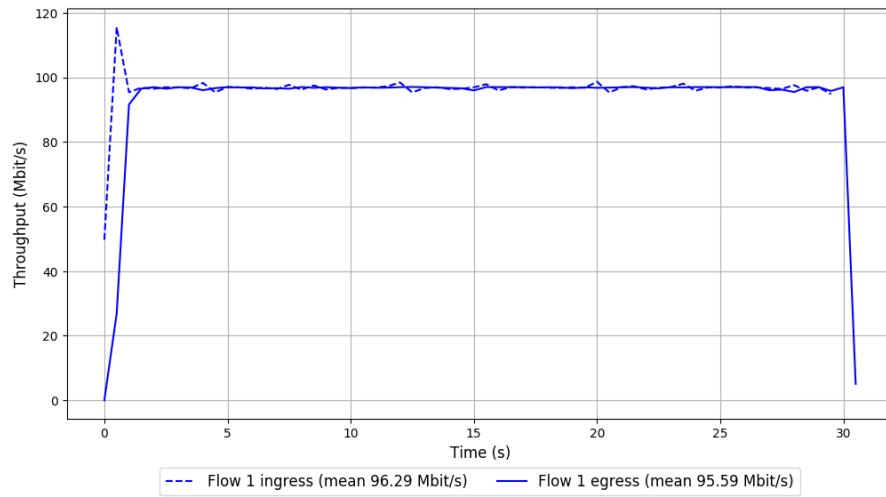


Run 5: Statistics of FillP

```
Start at: 2018-11-15 03:44:51
End at: 2018-11-15 03:45:21
Local clock offset: 1.322 ms
Remote clock offset: -2.378 ms

# Below is generated by plot.py at 2018-11-15 04:02:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 39.302 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 39.302 ms
Loss rate: 0.73%
```

Run 5: Report of FillP — Data Link

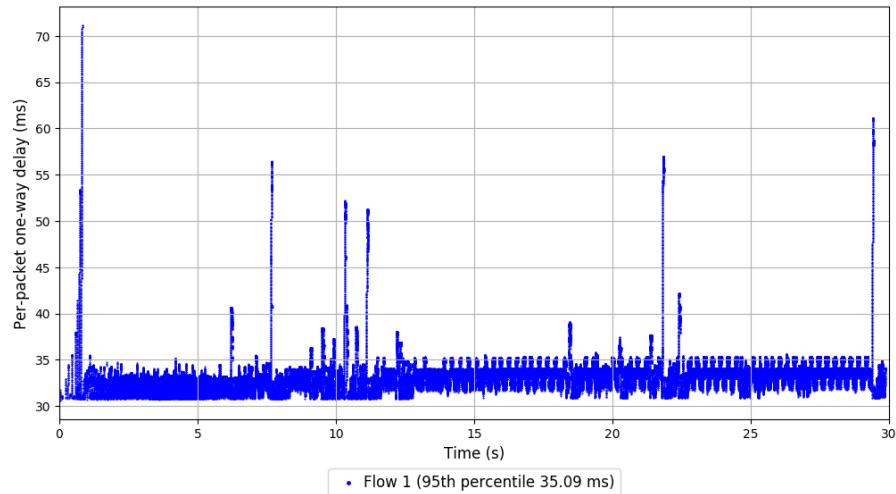
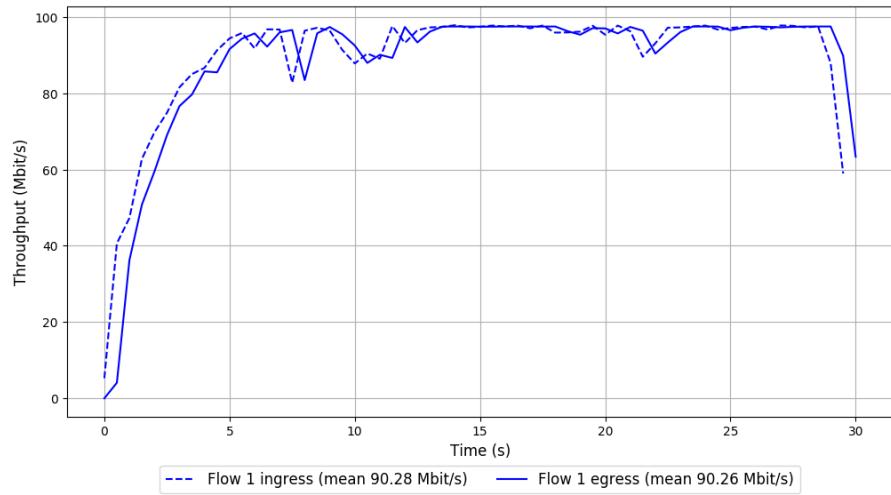


Run 1: Statistics of Indigo

```
Start at: 2018-11-15 02:03:11
End at: 2018-11-15 02:03:41
Local clock offset: 1.411 ms
Remote clock offset: -4.237 ms

# Below is generated by plot.py at 2018-11-15 04:02:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.26 Mbit/s
95th percentile per-packet one-way delay: 35.095 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 90.26 Mbit/s
95th percentile per-packet one-way delay: 35.095 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo — Data Link

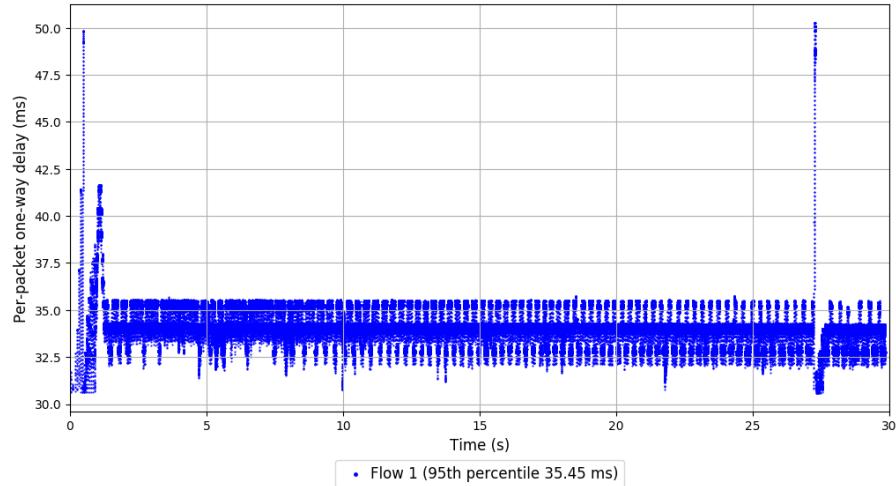
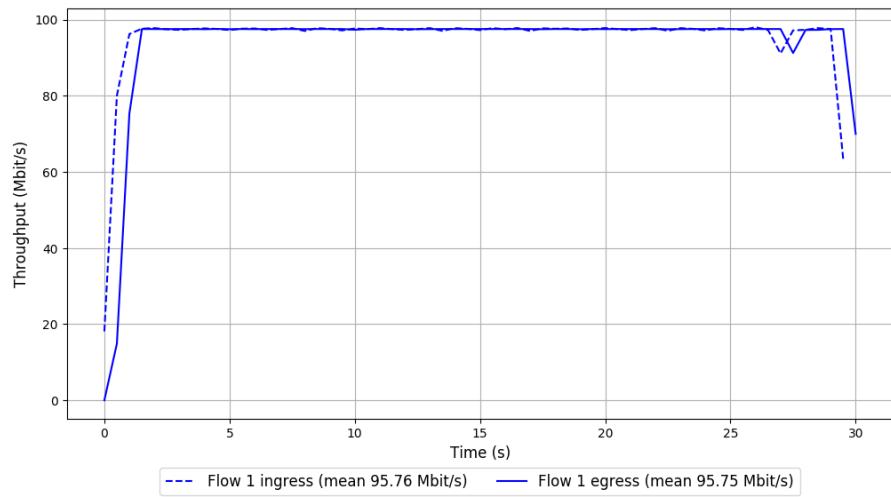


Run 2: Statistics of Indigo

```
Start at: 2018-11-15 02:28:37
End at: 2018-11-15 02:29:07
Local clock offset: 3.129 ms
Remote clock offset: -3.689 ms

# Below is generated by plot.py at 2018-11-15 04:03:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.75 Mbit/s
95th percentile per-packet one-way delay: 35.454 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.75 Mbit/s
95th percentile per-packet one-way delay: 35.454 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo — Data Link

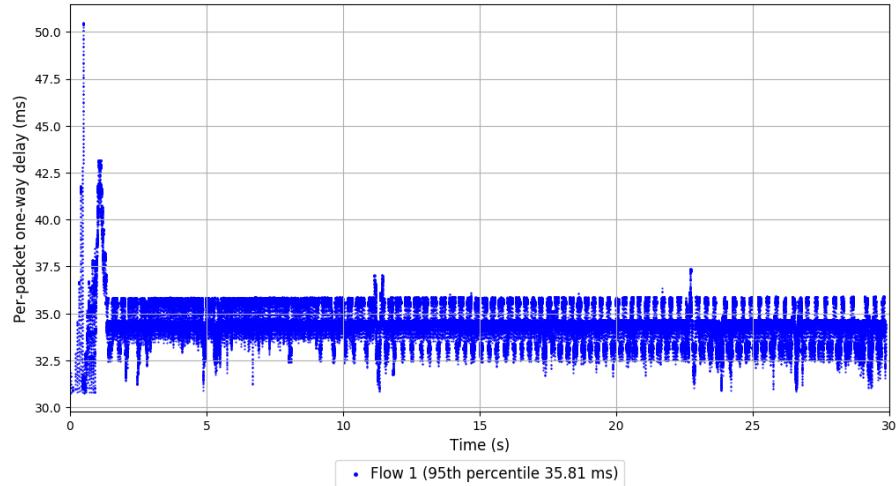
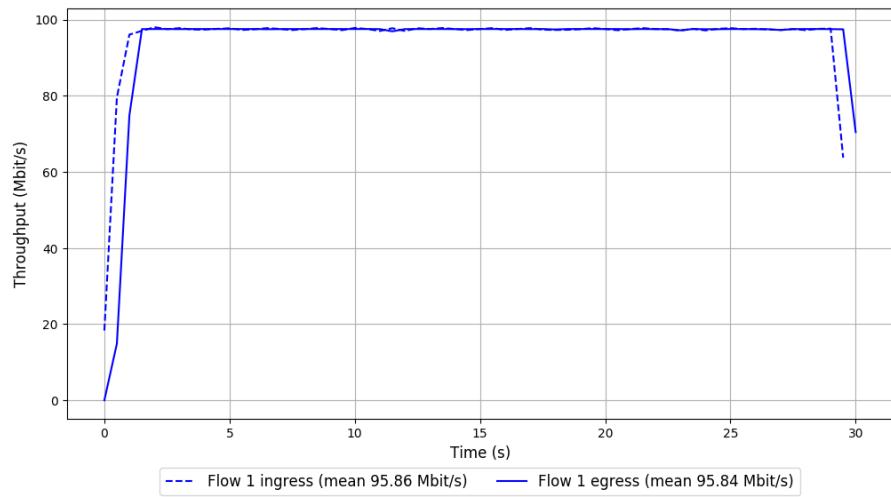


Run 3: Statistics of Indigo

```
Start at: 2018-11-15 02:52:43
End at: 2018-11-15 02:53:13
Local clock offset: 4.918 ms
Remote clock offset: -3.264 ms

# Below is generated by plot.py at 2018-11-15 04:03:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.84 Mbit/s
95th percentile per-packet one-way delay: 35.809 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 95.84 Mbit/s
95th percentile per-packet one-way delay: 35.809 ms
Loss rate: 0.01%
```

Run 3: Report of Indigo — Data Link

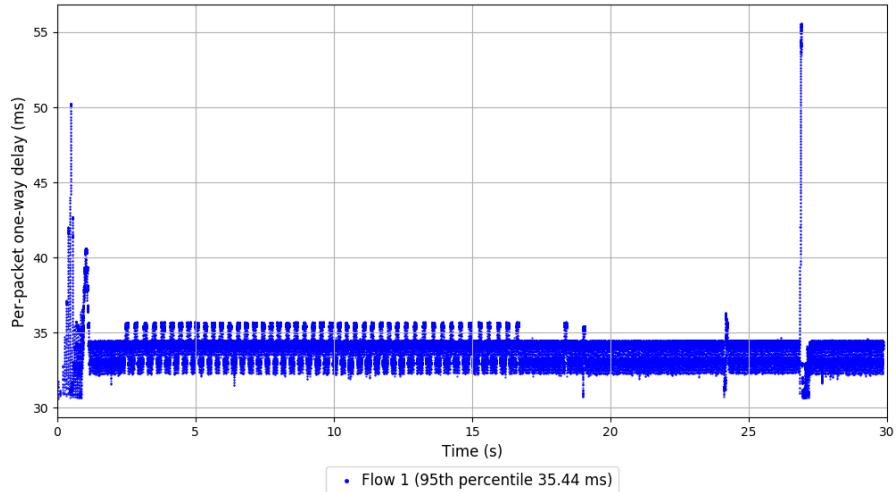
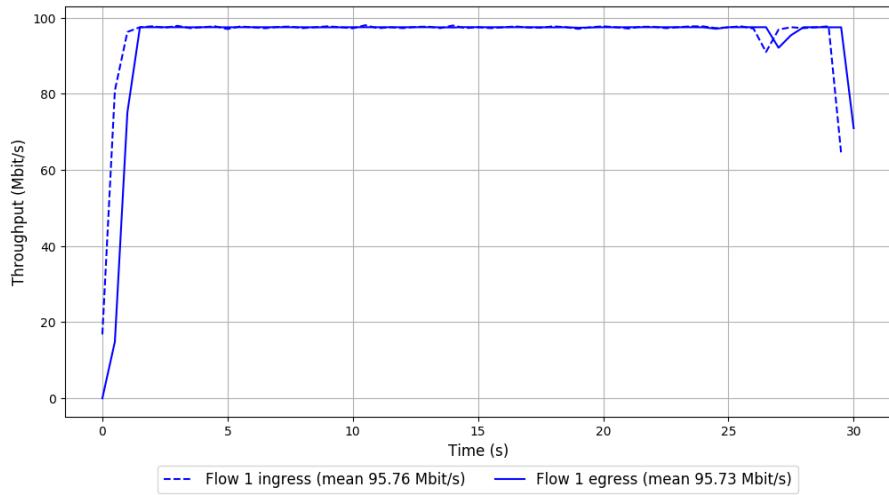


Run 4: Statistics of Indigo

```
Start at: 2018-11-15 03:17:05
End at: 2018-11-15 03:17:35
Local clock offset: 2.565 ms
Remote clock offset: -2.78 ms

# Below is generated by plot.py at 2018-11-15 04:03:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.73 Mbit/s
95th percentile per-packet one-way delay: 35.440 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 95.73 Mbit/s
95th percentile per-packet one-way delay: 35.440 ms
Loss rate: 0.01%
```

Run 4: Report of Indigo — Data Link

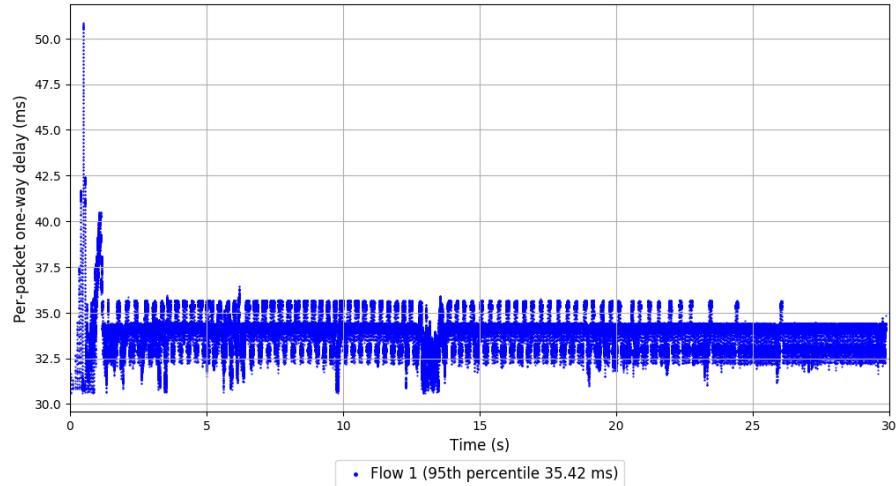
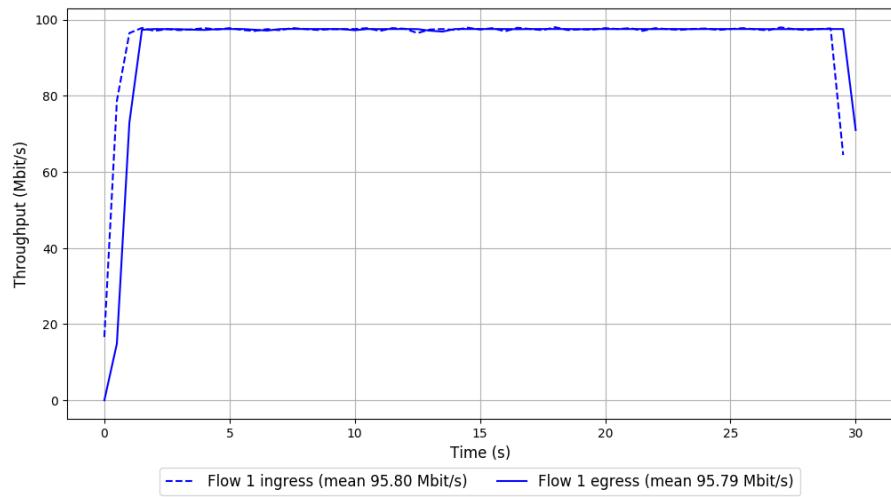


Run 5: Statistics of Indigo

```
Start at: 2018-11-15 03:40:49
End at: 2018-11-15 03:41:19
Local clock offset: 1.331 ms
Remote clock offset: -2.411 ms

# Below is generated by plot.py at 2018-11-15 04:03:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.79 Mbit/s
95th percentile per-packet one-way delay: 35.417 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.79 Mbit/s
95th percentile per-packet one-way delay: 35.417 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo — Data Link

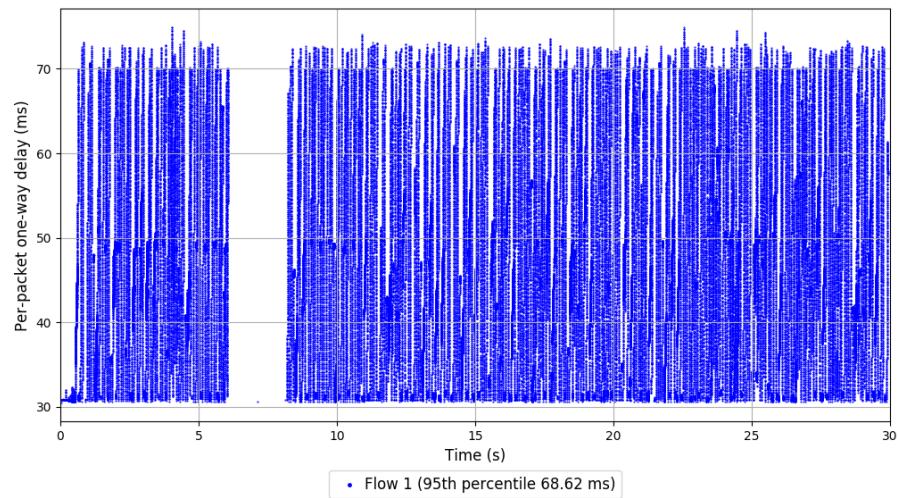
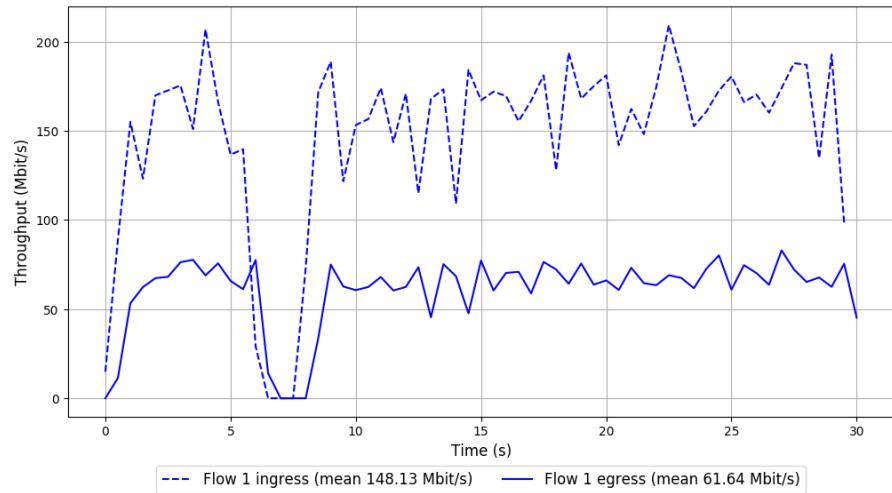


```
Run 1: Statistics of Indigo-96d2da3
```

```
Start at: 2018-11-15 02:14:49
End at: 2018-11-15 02:15:19
Local clock offset: 2.364 ms
Remote clock offset: -3.85 ms

# Below is generated by plot.py at 2018-11-15 04:03:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.64 Mbit/s
95th percentile per-packet one-way delay: 68.625 ms
Loss rate: 58.35%
-- Flow 1:
Average throughput: 61.64 Mbit/s
95th percentile per-packet one-way delay: 68.625 ms
Loss rate: 58.35%
```

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

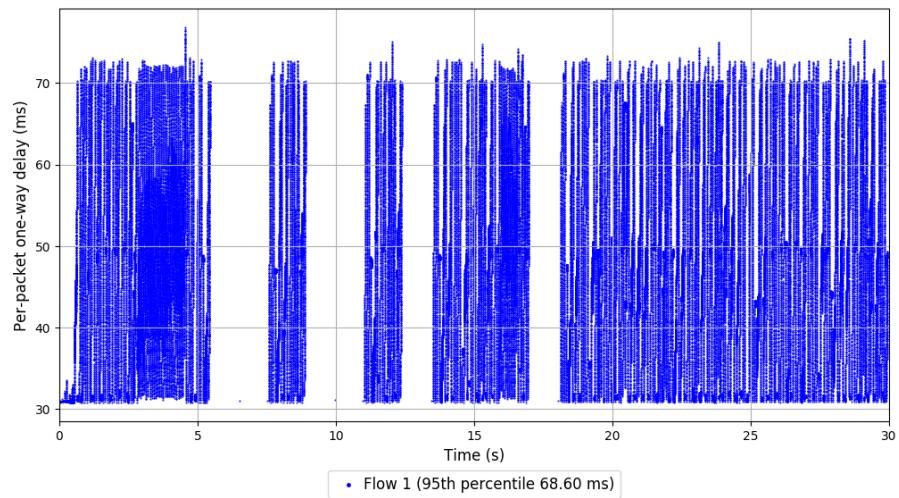
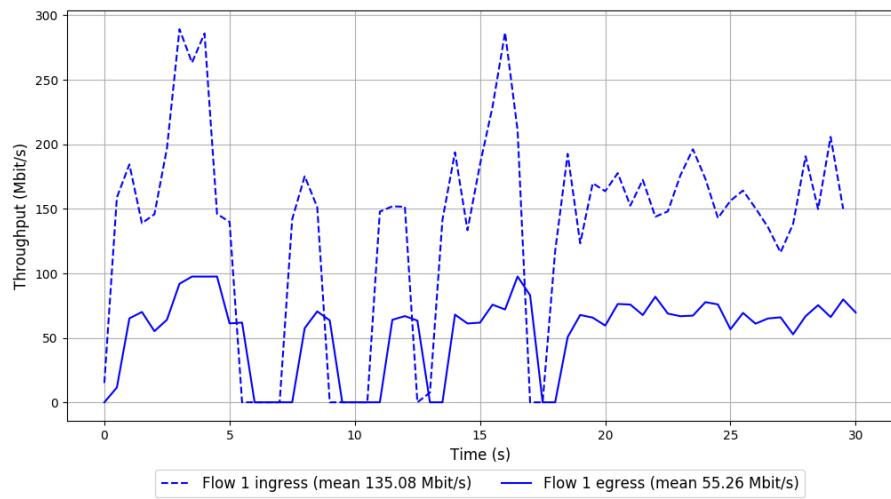


```
Run 2: Statistics of Indigo-96d2da3
```

```
Start at: 2018-11-15 02:39:22
End at: 2018-11-15 02:39:52
Local clock offset: 3.217 ms
Remote clock offset: -3.45 ms

# Below is generated by plot.py at 2018-11-15 04:03:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.26 Mbit/s
95th percentile per-packet one-way delay: 68.604 ms
Loss rate: 59.06%
-- Flow 1:
Average throughput: 55.26 Mbit/s
95th percentile per-packet one-way delay: 68.604 ms
Loss rate: 59.06%
```

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

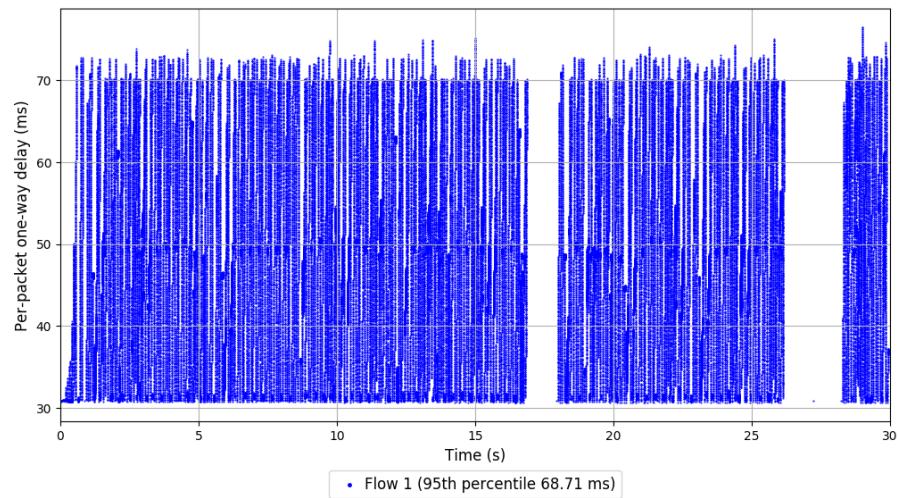
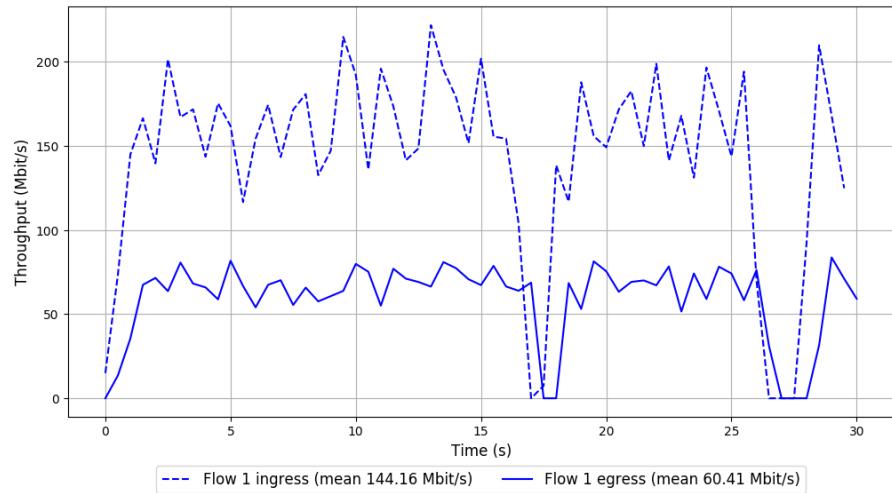


```
Run 3: Statistics of Indigo-96d2da3
```

```
Start at: 2018-11-15 03:03:38
End at: 2018-11-15 03:04:08
Local clock offset: 3.262 ms
Remote clock offset: -2.86 ms

# Below is generated by plot.py at 2018-11-15 04:03:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.41 Mbit/s
95th percentile per-packet one-way delay: 68.707 ms
Loss rate: 58.08%
-- Flow 1:
Average throughput: 60.41 Mbit/s
95th percentile per-packet one-way delay: 68.707 ms
Loss rate: 58.08%
```

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

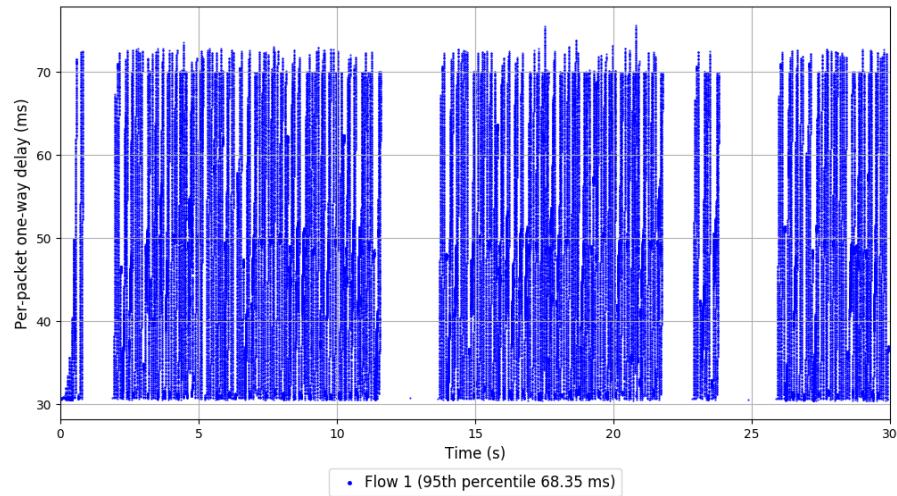
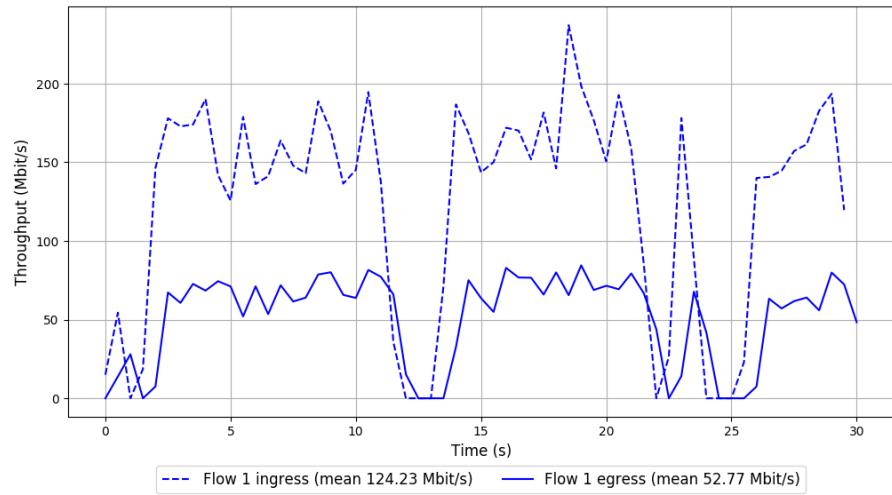


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 03:27:41
End at: 2018-11-15 03:28:11
Local clock offset: 2.974 ms
Remote clock offset: -2.641 ms

# Below is generated by plot.py at 2018-11-15 04:03:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.77 Mbit/s
95th percentile per-packet one-way delay: 68.347 ms
Loss rate: 57.51%
-- Flow 1:
Average throughput: 52.77 Mbit/s
95th percentile per-packet one-way delay: 68.347 ms
Loss rate: 57.51%
```

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

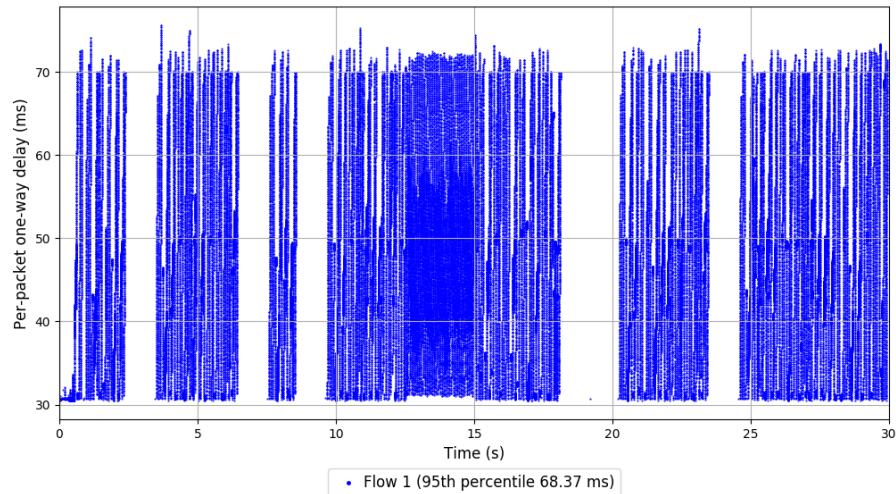
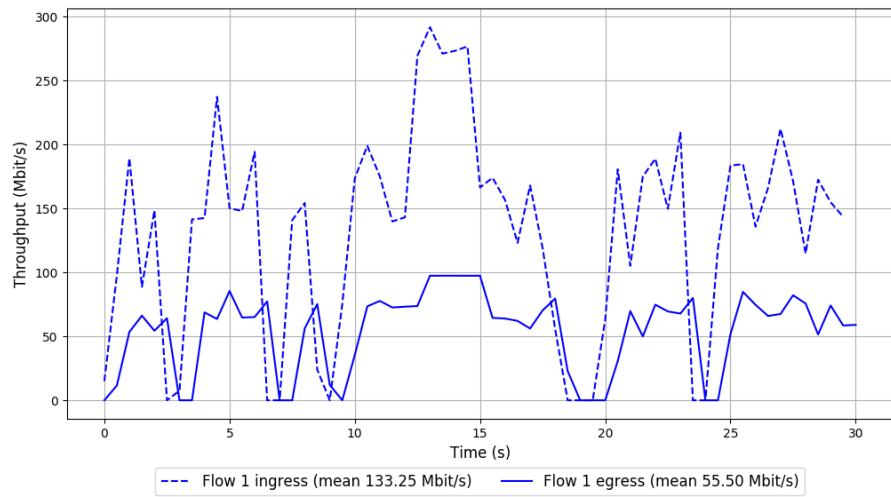


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-11-15 03:51:18
End at: 2018-11-15 03:51:48
Local clock offset: 1.498 ms
Remote clock offset: -2.087 ms

# Below is generated by plot.py at 2018-11-15 04:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.50 Mbit/s
95th percentile per-packet one-way delay: 68.370 ms
Loss rate: 58.31%
-- Flow 1:
Average throughput: 55.50 Mbit/s
95th percentile per-packet one-way delay: 68.370 ms
Loss rate: 58.31%
```

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

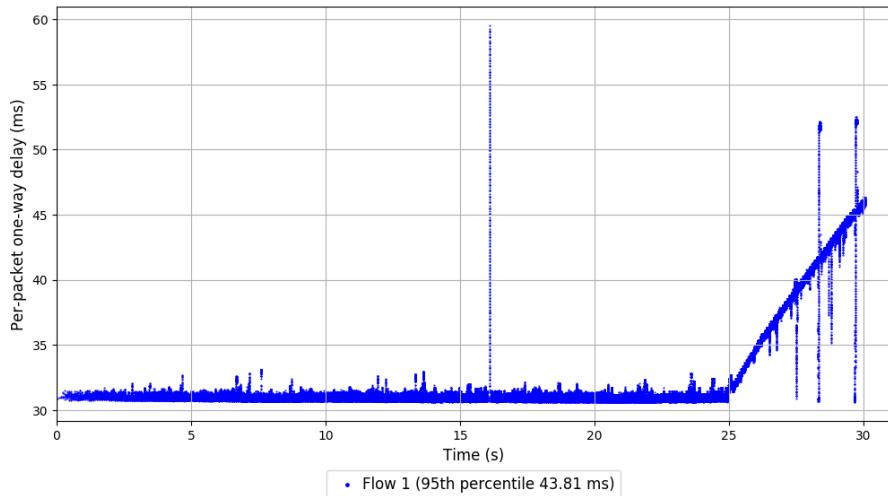
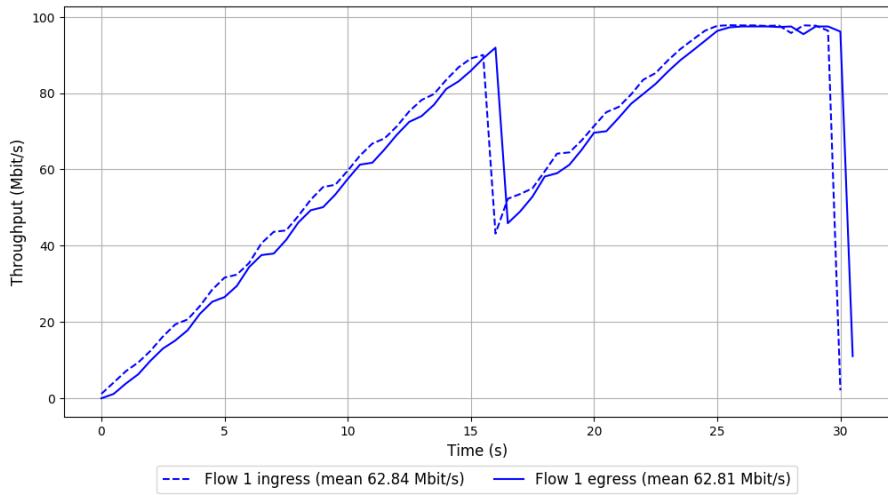


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-11-15 01:57:39
End at: 2018-11-15 01:58:09
Local clock offset: 0.953 ms
Remote clock offset: -4.065 ms

# Below is generated by plot.py at 2018-11-15 04:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.81 Mbit/s
95th percentile per-packet one-way delay: 43.815 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 62.81 Mbit/s
95th percentile per-packet one-way delay: 43.815 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

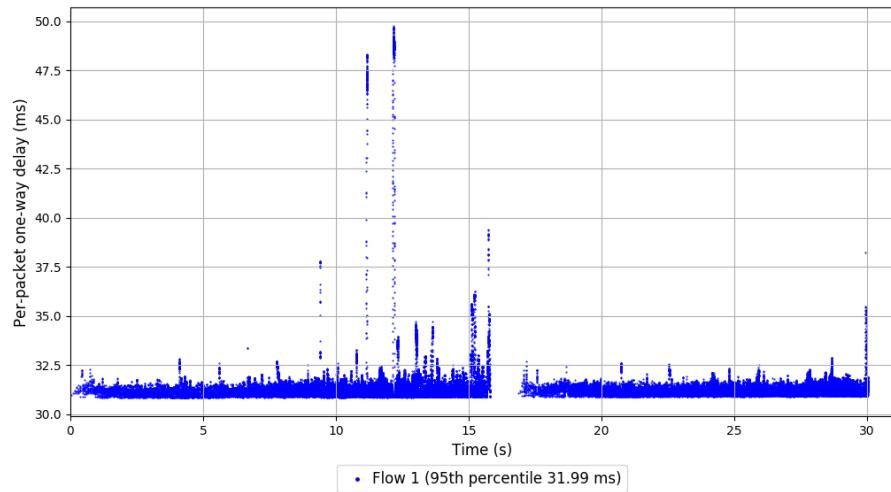
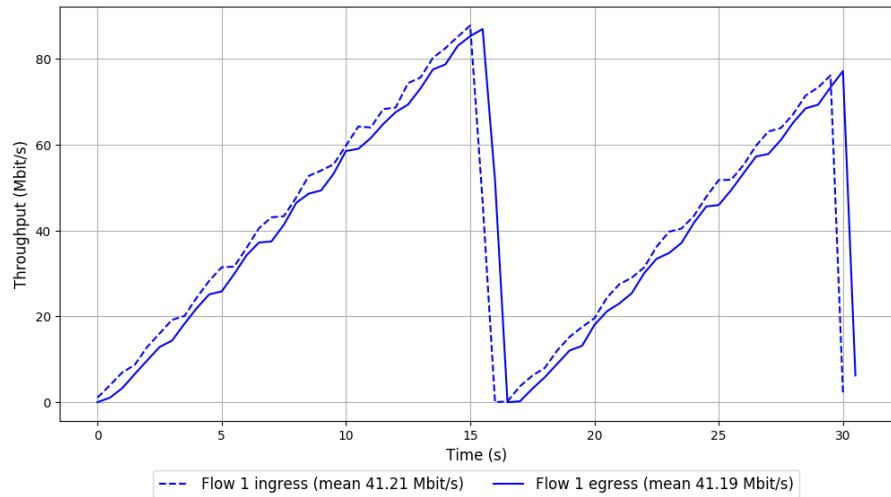


Run 2: Statistics of LEDBAT

```
Start at: 2018-11-15 02:23:18
End at: 2018-11-15 02:23:48
Local clock offset: 2.713 ms
Remote clock offset: -3.695 ms

# Below is generated by plot.py at 2018-11-15 04:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.19 Mbit/s
95th percentile per-packet one-way delay: 31.988 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 41.19 Mbit/s
95th percentile per-packet one-way delay: 31.988 ms
Loss rate: 0.03%
```

Run 2: Report of LEDBAT — Data Link

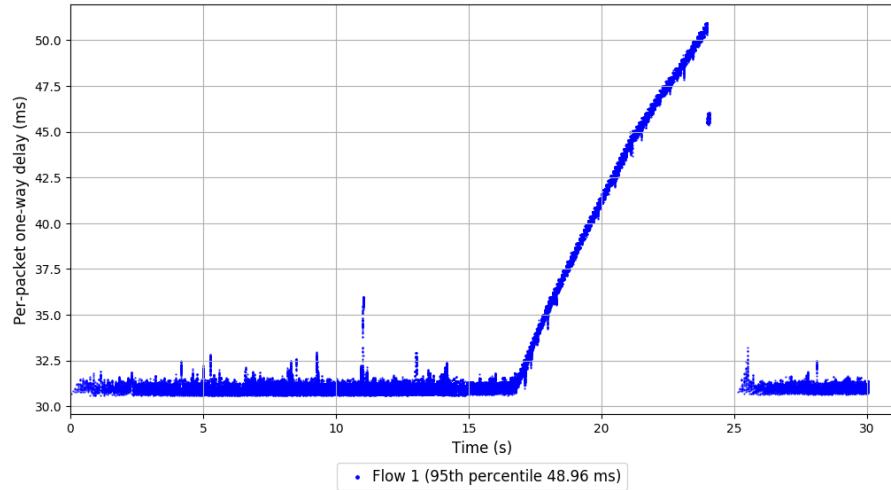
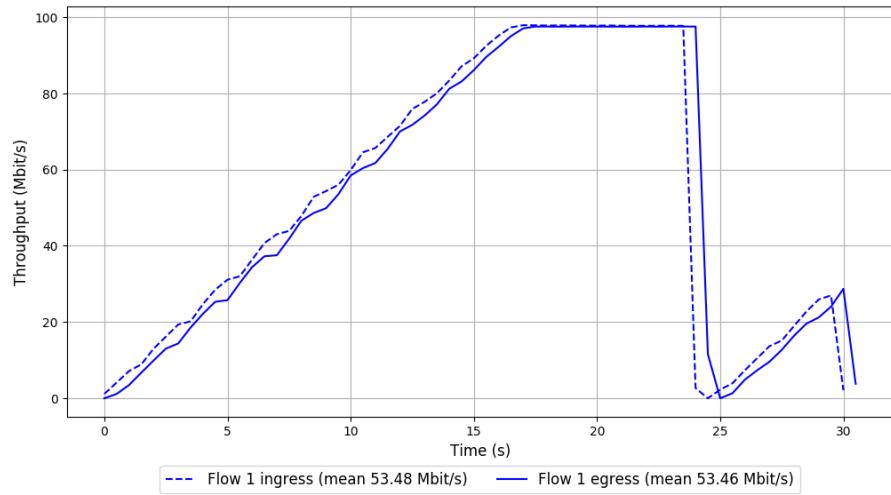


Run 3: Statistics of LEDBAT

```
Start at: 2018-11-15 02:47:26
End at: 2018-11-15 02:47:56
Local clock offset: 4.153 ms
Remote clock offset: -3.52 ms

# Below is generated by plot.py at 2018-11-15 04:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 53.46 Mbit/s
95th percentile per-packet one-way delay: 48.961 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 53.46 Mbit/s
95th percentile per-packet one-way delay: 48.961 ms
Loss rate: 0.03%
```

Run 3: Report of LEDBAT — Data Link

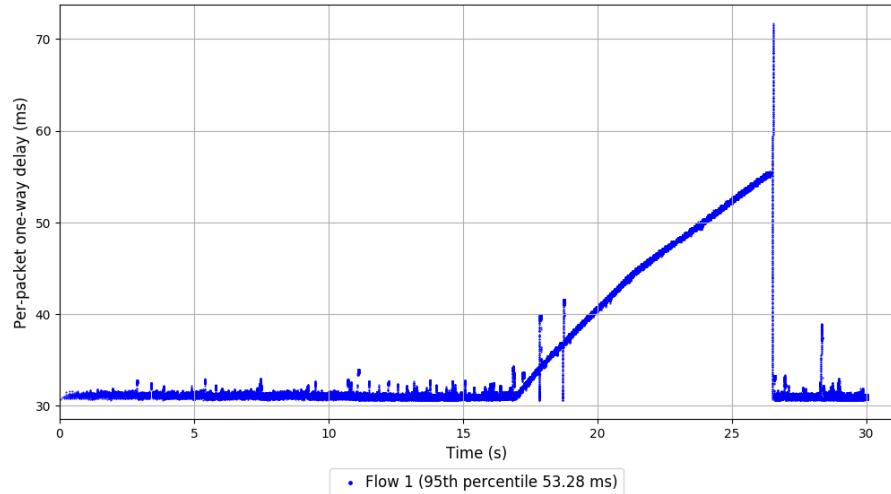
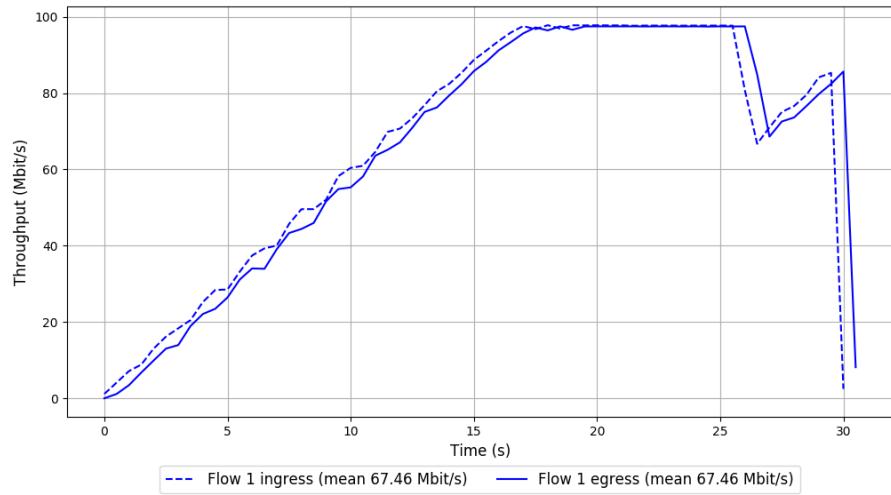


Run 4: Statistics of LEDBAT

```
Start at: 2018-11-15 03:11:47
End at: 2018-11-15 03:12:17
Local clock offset: 2.525 ms
Remote clock offset: -2.827 ms

# Below is generated by plot.py at 2018-11-15 04:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.46 Mbit/s
95th percentile per-packet one-way delay: 53.282 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 67.46 Mbit/s
95th percentile per-packet one-way delay: 53.282 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

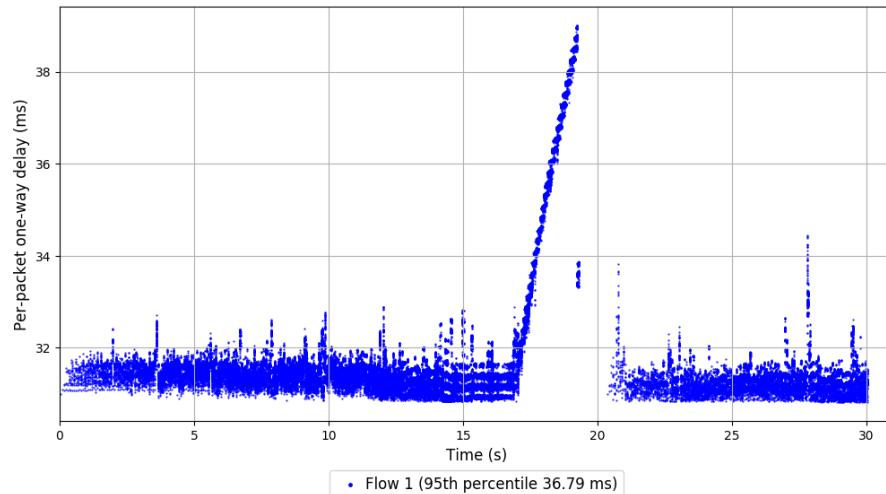
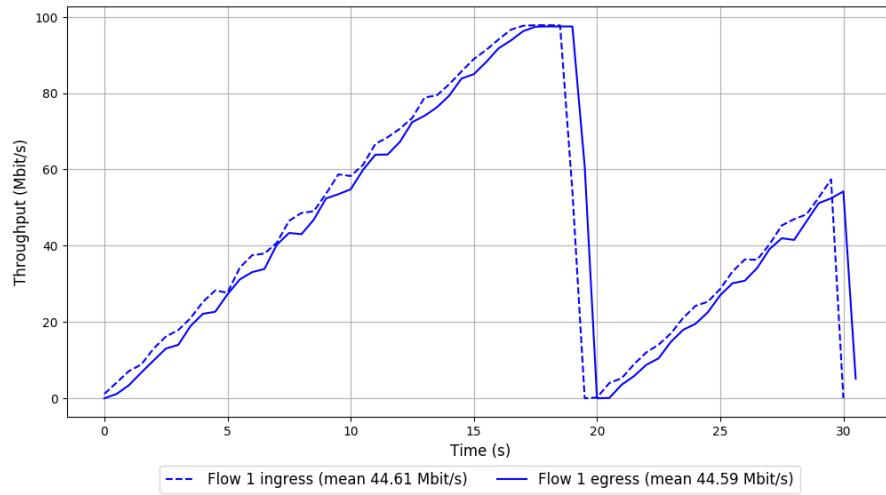


Run 5: Statistics of LEDBAT

```
Start at: 2018-11-15 03:35:38
End at: 2018-11-15 03:36:08
Local clock offset: 1.605 ms
Remote clock offset: -2.406 ms

# Below is generated by plot.py at 2018-11-15 04:04:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.59 Mbit/s
95th percentile per-packet one-way delay: 36.791 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 44.59 Mbit/s
95th percentile per-packet one-way delay: 36.791 ms
Loss rate: 0.04%
```

Run 5: Report of LEDBAT — Data Link

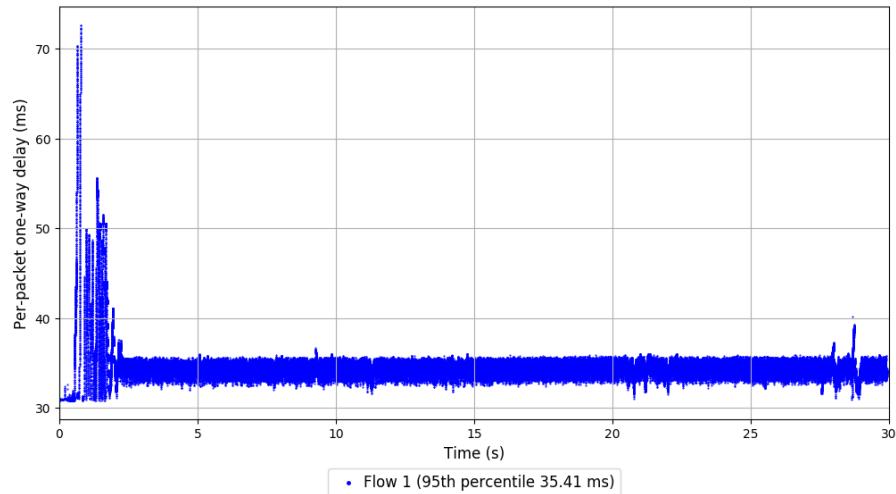
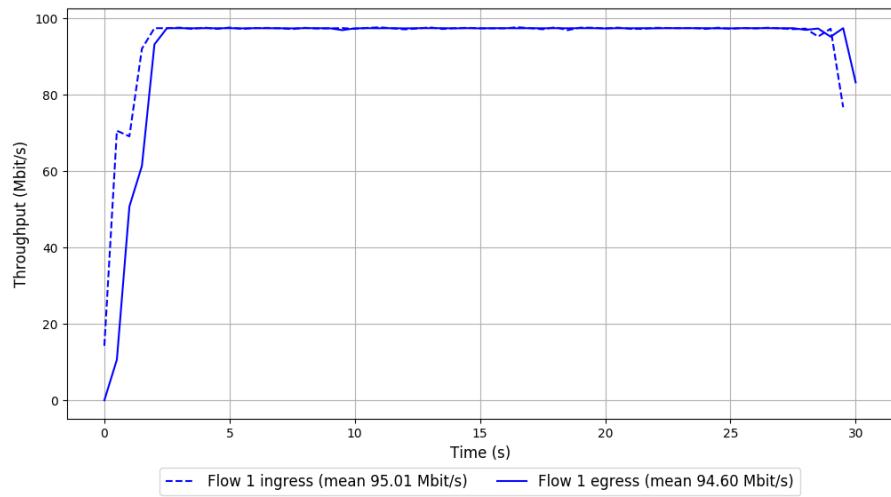


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-11-15 02:10:52
End at: 2018-11-15 02:11:22
Local clock offset: 2.239 ms
Remote clock offset: -3.989 ms

# Below is generated by plot.py at 2018-11-15 04:04:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.60 Mbit/s
95th percentile per-packet one-way delay: 35.414 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 94.60 Mbit/s
95th percentile per-packet one-way delay: 35.414 ms
Loss rate: 0.42%
```

Run 1: Report of Indigo-Muses — Data Link

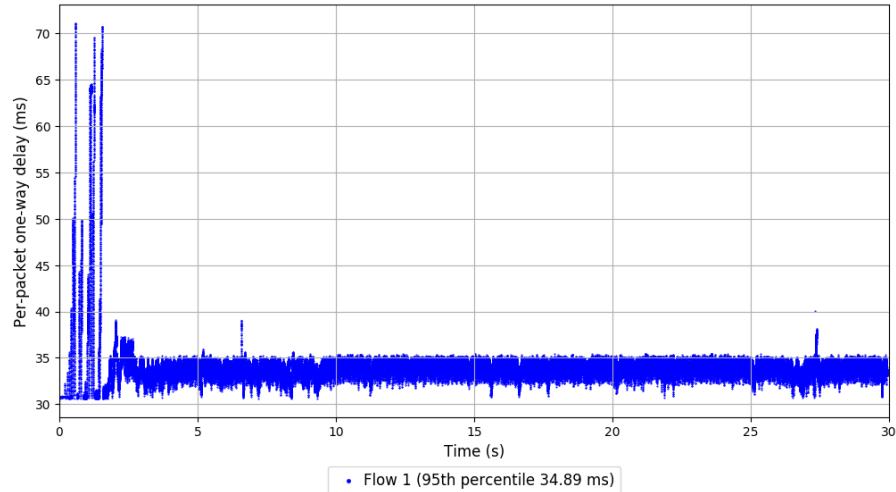
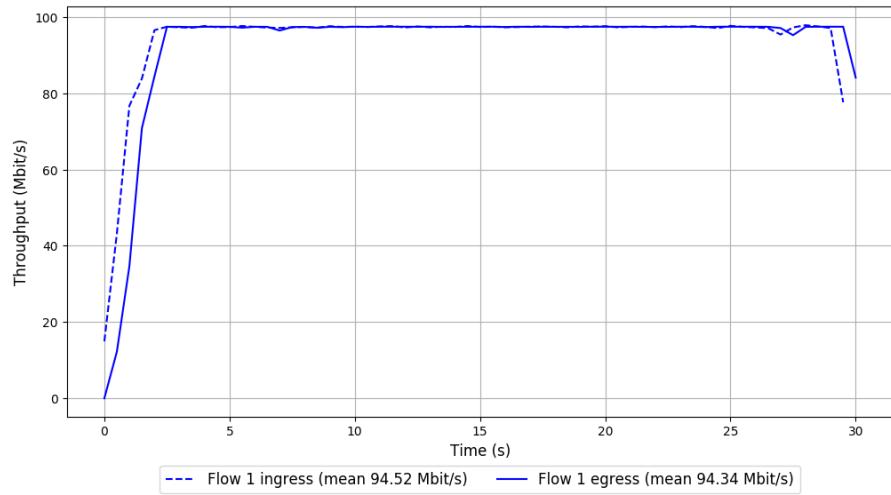


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-11-15 02:35:23
End at: 2018-11-15 02:35:53
Local clock offset: 2.927 ms
Remote clock offset: -3.687 ms

# Below is generated by plot.py at 2018-11-15 04:04:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.34 Mbit/s
95th percentile per-packet one-way delay: 34.894 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 94.34 Mbit/s
95th percentile per-packet one-way delay: 34.894 ms
Loss rate: 0.18%
```

Run 2: Report of Indigo-Muses — Data Link

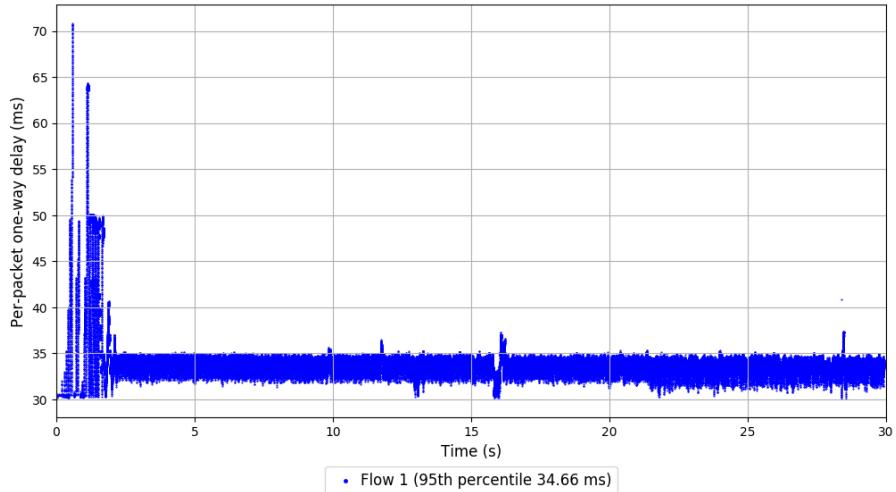
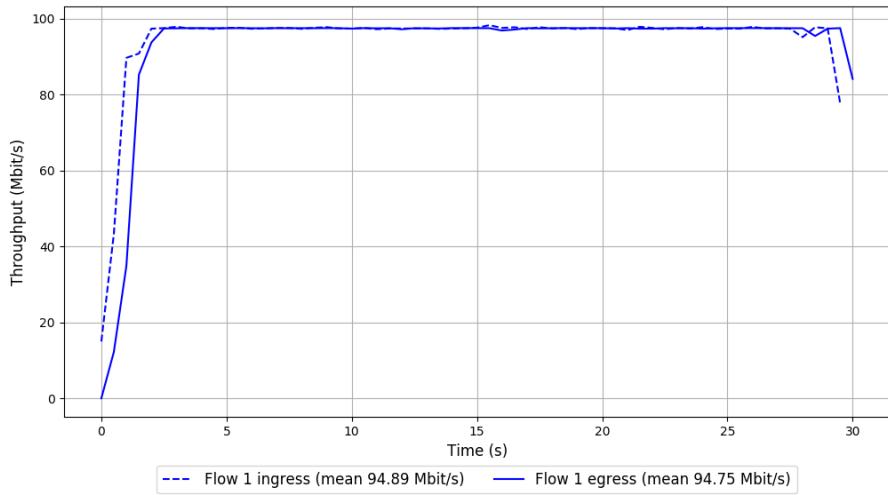


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-11-15 02:59:39
End at: 2018-11-15 03:00:09
Local clock offset: 4.476 ms
Remote clock offset: -3.318 ms

# Below is generated by plot.py at 2018-11-15 04:04:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.75 Mbit/s
95th percentile per-packet one-way delay: 34.665 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 94.75 Mbit/s
95th percentile per-packet one-way delay: 34.665 ms
Loss rate: 0.14%
```

Run 3: Report of Indigo-Muses — Data Link

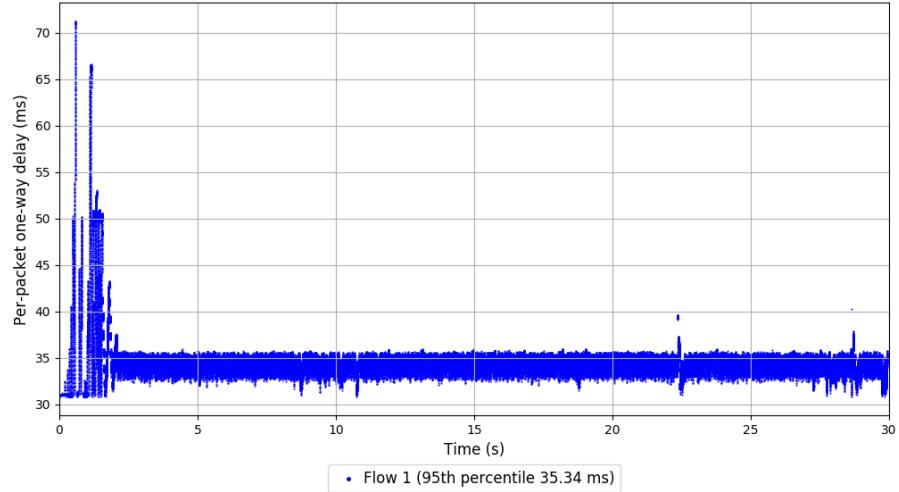
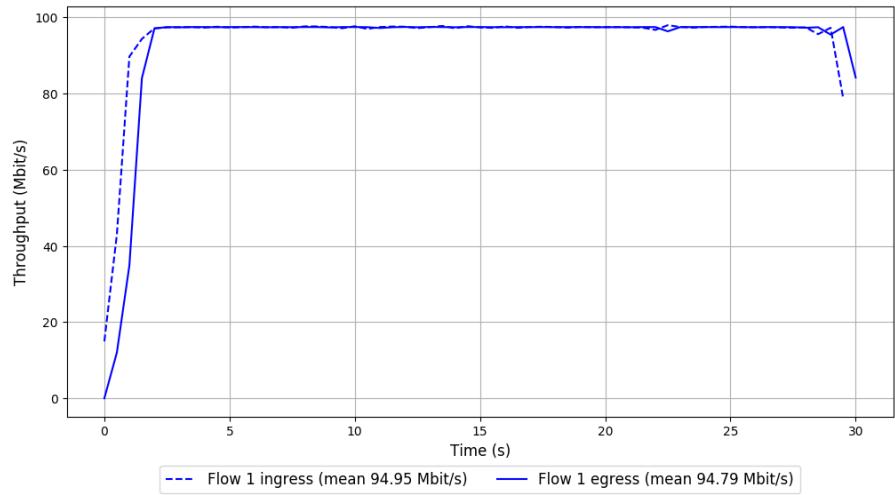


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-11-15 03:23:47
End at: 2018-11-15 03:24:17
Local clock offset: 2.924 ms
Remote clock offset: -2.647 ms

# Below is generated by plot.py at 2018-11-15 04:05:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.79 Mbit/s
95th percentile per-packet one-way delay: 35.341 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 94.79 Mbit/s
95th percentile per-packet one-way delay: 35.341 ms
Loss rate: 0.16%
```

Run 4: Report of Indigo-Muses — Data Link

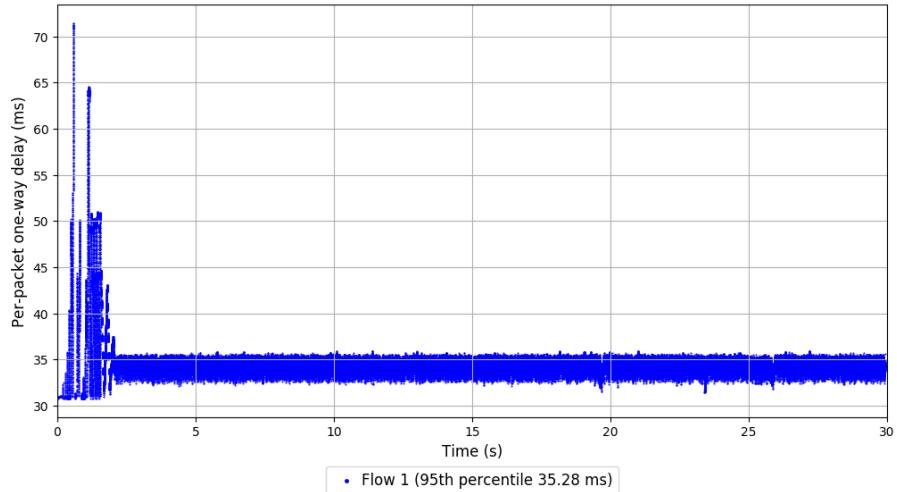
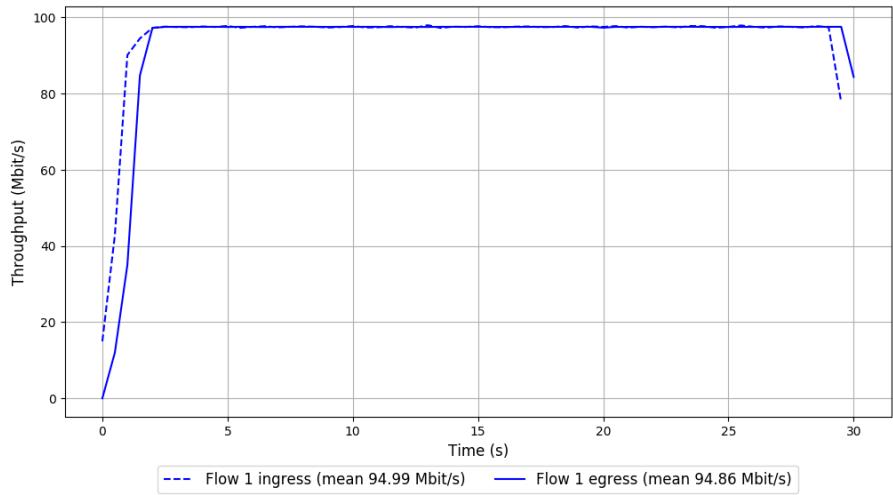


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-11-15 03:47:26
End at: 2018-11-15 03:47:56
Local clock offset: 1.365 ms
Remote clock offset: -2.033 ms

# Below is generated by plot.py at 2018-11-15 04:05:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.86 Mbit/s
95th percentile per-packet one-way delay: 35.280 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 94.86 Mbit/s
95th percentile per-packet one-way delay: 35.280 ms
Loss rate: 0.12%
```

Run 5: Report of Indigo-Muses — Data Link

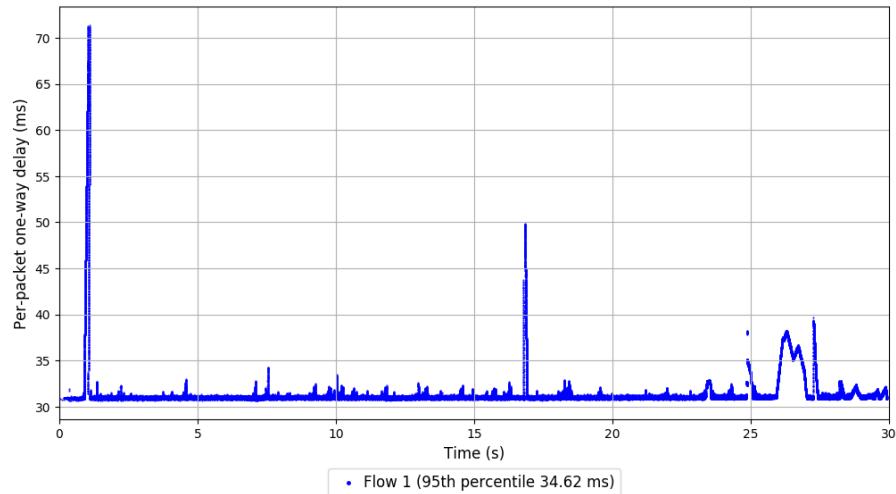
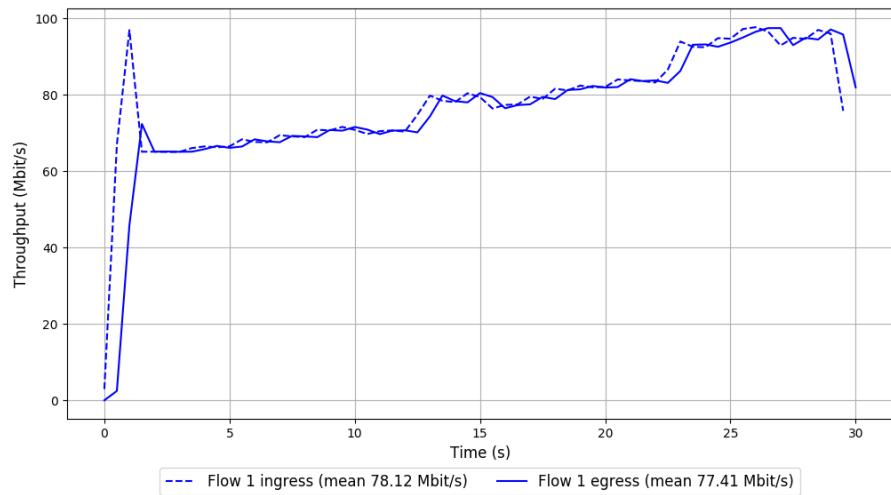


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-11-15 02:18:58
End at: 2018-11-15 02:19:28
Local clock offset: 2.162 ms
Remote clock offset: -3.849 ms

# Below is generated by plot.py at 2018-11-15 04:05:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.41 Mbit/s
95th percentile per-packet one-way delay: 34.615 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 77.41 Mbit/s
95th percentile per-packet one-way delay: 34.615 ms
Loss rate: 0.91%
```

Run 1: Report of PCC-Allegro — Data Link

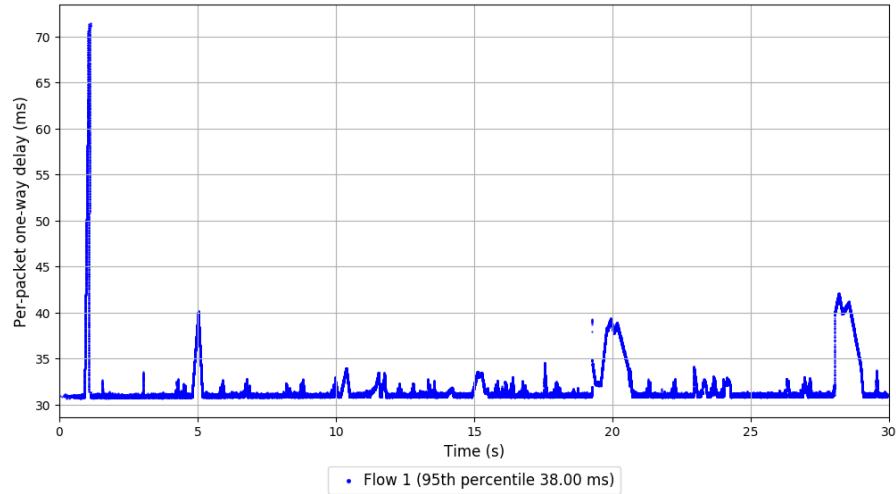
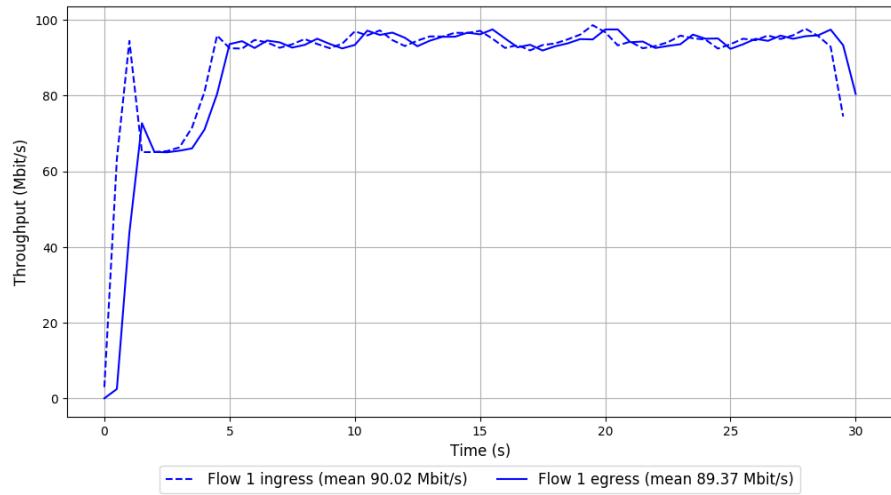


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-11-15 02:43:25
End at: 2018-11-15 02:43:55
Local clock offset: 3.673 ms
Remote clock offset: -3.433 ms

# Below is generated by plot.py at 2018-11-15 04:05:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.37 Mbit/s
95th percentile per-packet one-way delay: 37.998 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 89.37 Mbit/s
95th percentile per-packet one-way delay: 37.998 ms
Loss rate: 0.72%
```

Run 2: Report of PCC-Allegro — Data Link

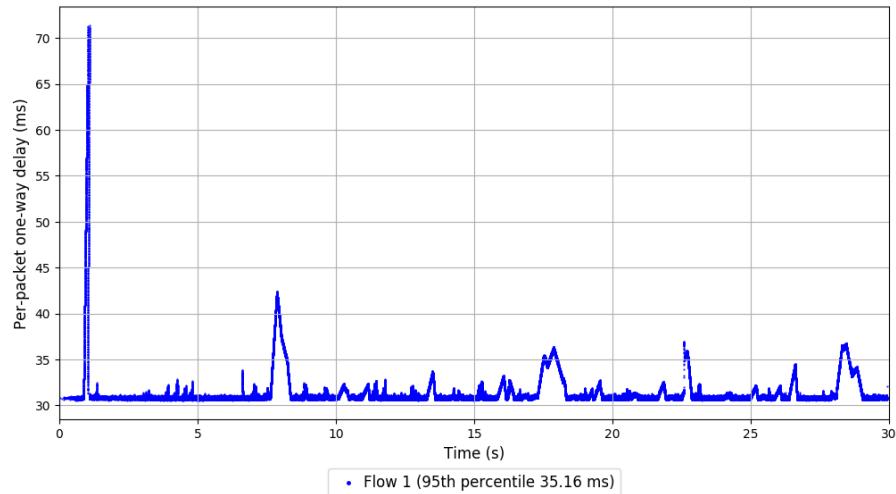
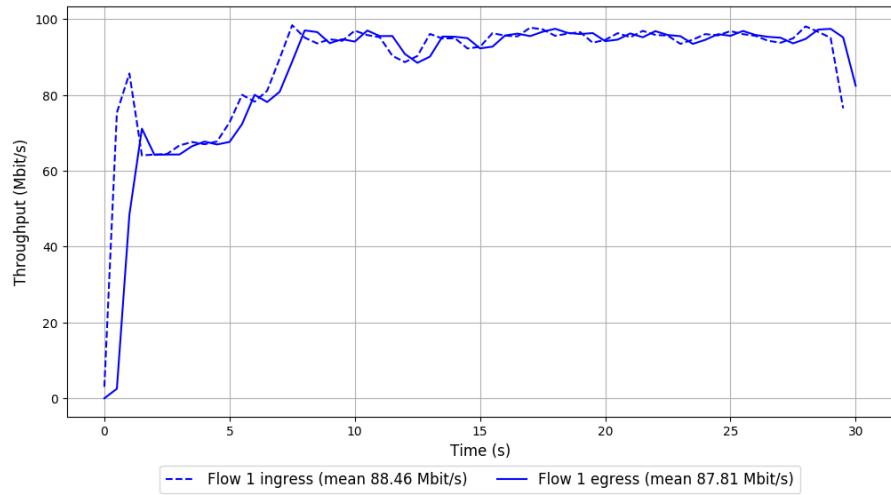


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-11-15 03:07:42
End at: 2018-11-15 03:08:13
Local clock offset: 2.74 ms
Remote clock offset: -2.882 ms

# Below is generated by plot.py at 2018-11-15 04:05:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.81 Mbit/s
95th percentile per-packet one-way delay: 35.155 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 87.81 Mbit/s
95th percentile per-packet one-way delay: 35.155 ms
Loss rate: 0.72%
```

Run 3: Report of PCC-Allegro — Data Link

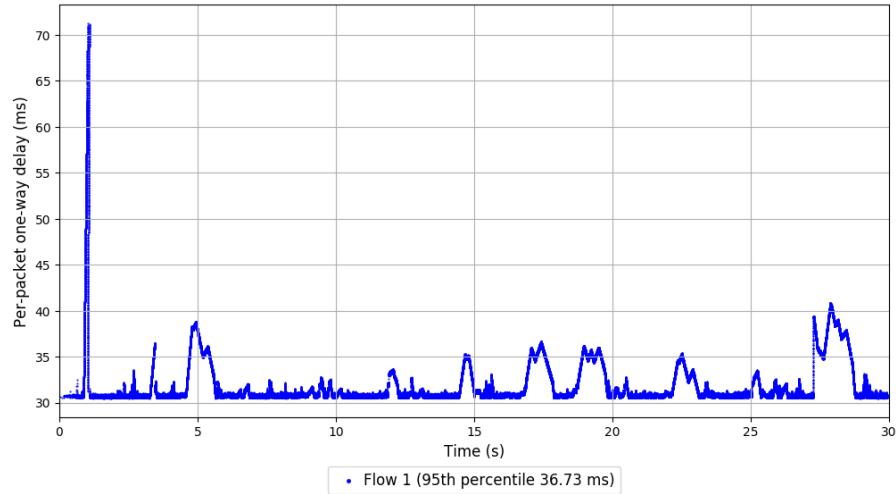
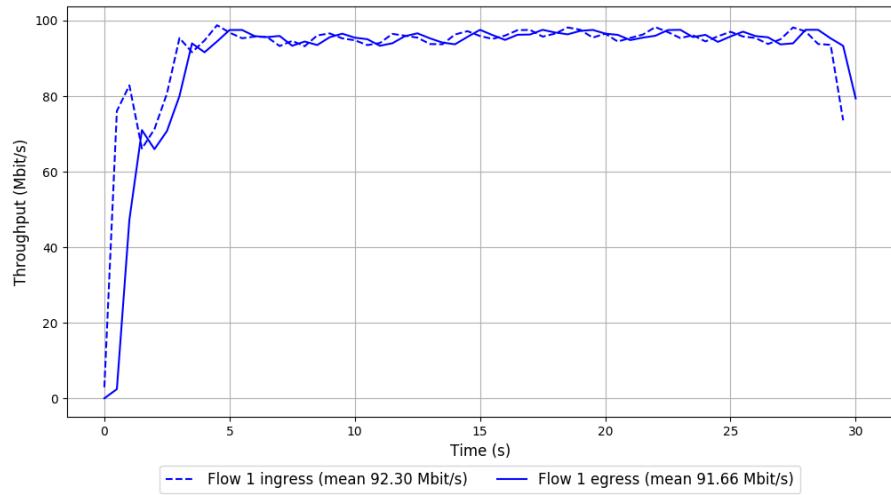


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-11-15 03:31:40
End at: 2018-11-15 03:32:10
Local clock offset: 2.078 ms
Remote clock offset: -2.638 ms

# Below is generated by plot.py at 2018-11-15 04:05:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.66 Mbit/s
95th percentile per-packet one-way delay: 36.727 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 91.66 Mbit/s
95th percentile per-packet one-way delay: 36.727 ms
Loss rate: 0.69%
```

Run 4: Report of PCC-Allegro — Data Link

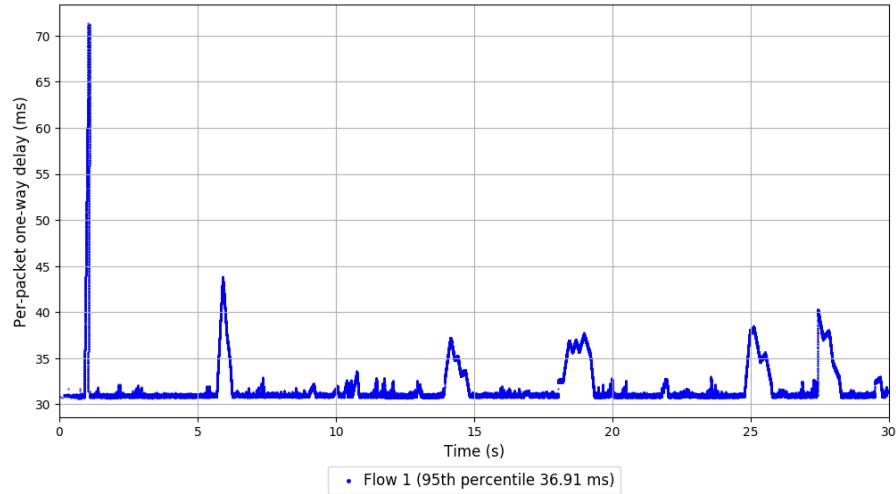
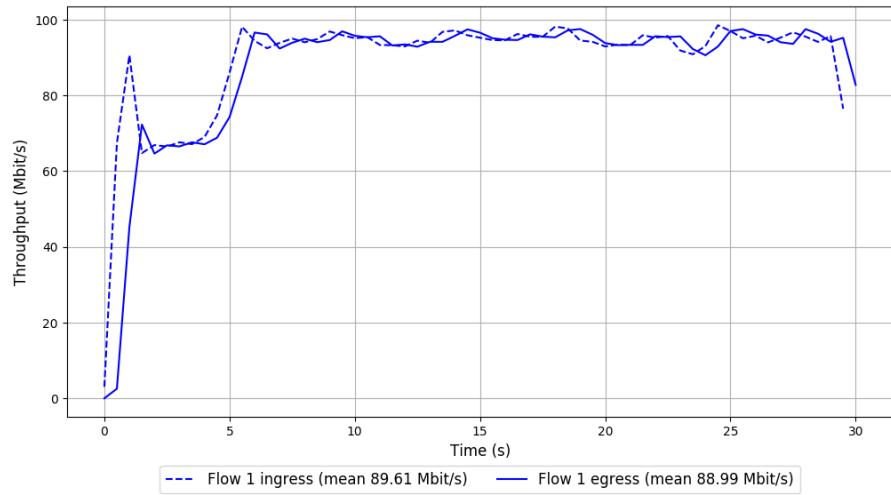


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-11-15 03:55:17
End at: 2018-11-15 03:55:47
Local clock offset: 1.687 ms
Remote clock offset: -1.663 ms

# Below is generated by plot.py at 2018-11-15 04:05:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.99 Mbit/s
95th percentile per-packet one-way delay: 36.905 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 88.99 Mbit/s
95th percentile per-packet one-way delay: 36.905 ms
Loss rate: 0.69%
```

Run 5: Report of PCC-Allegro — Data Link

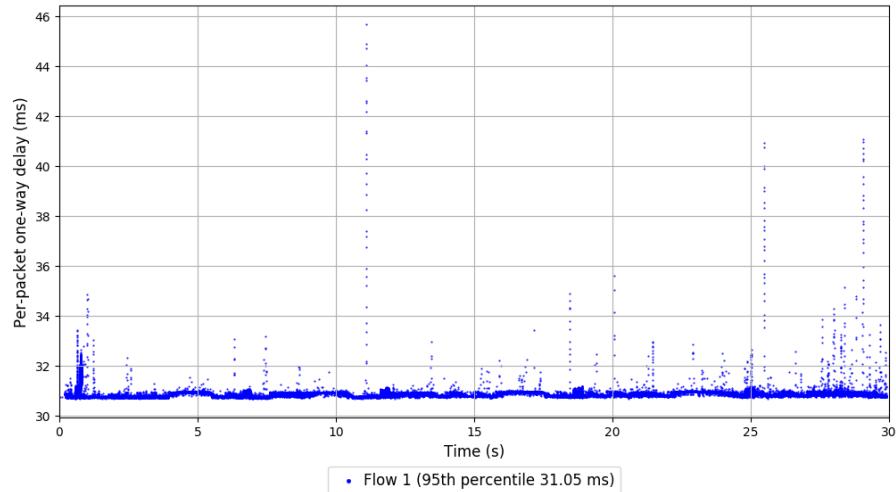
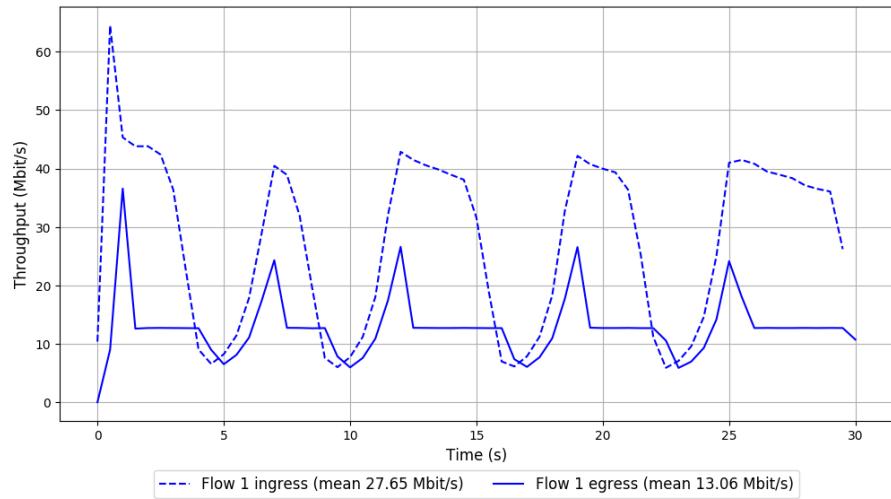


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-11-15 02:20:25
End at: 2018-11-15 02:20:55
Local clock offset: 2.301 ms
Remote clock offset: -3.806 ms

# Below is generated by plot.py at 2018-11-15 04:05:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.055 ms
Loss rate: 52.77%
-- Flow 1:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.055 ms
Loss rate: 52.77%
```

Run 1: Report of PCC-Expr — Data Link

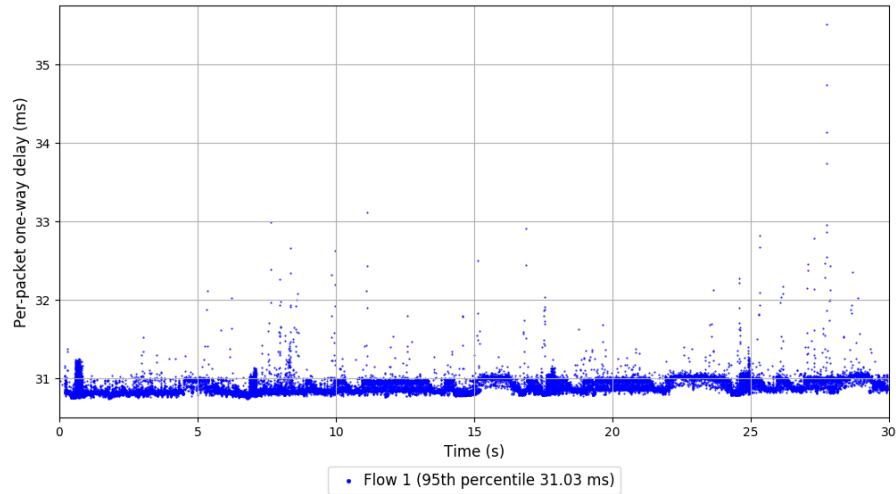
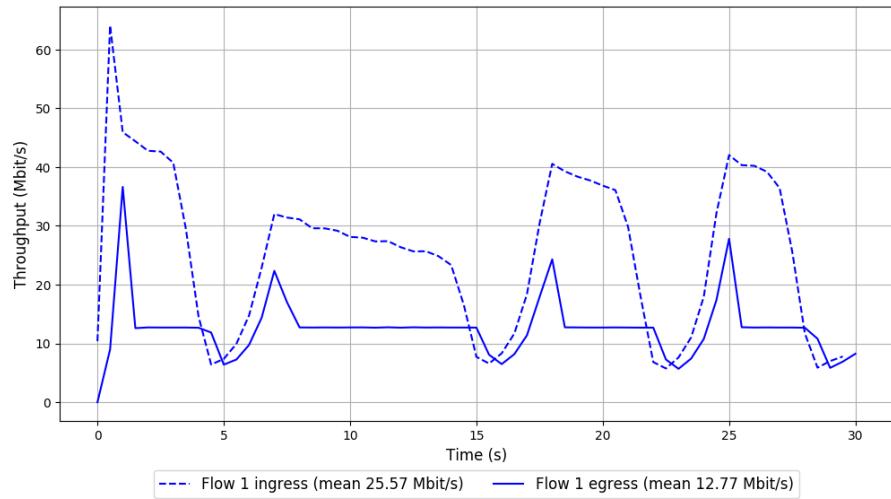


Run 2: Statistics of PCC-Expr

```
Start at: 2018-11-15 02:44:46
End at: 2018-11-15 02:45:16
Local clock offset: 3.843 ms
Remote clock offset: -3.346 ms

# Below is generated by plot.py at 2018-11-15 04:05:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.77 Mbit/s
95th percentile per-packet one-way delay: 31.027 ms
Loss rate: 50.07%
-- Flow 1:
Average throughput: 12.77 Mbit/s
95th percentile per-packet one-way delay: 31.027 ms
Loss rate: 50.07%
```

Run 2: Report of PCC-Expr — Data Link

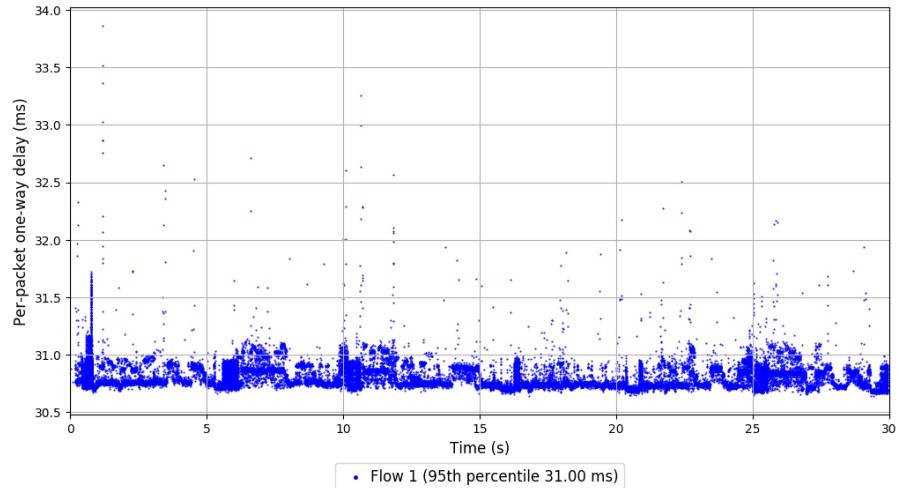
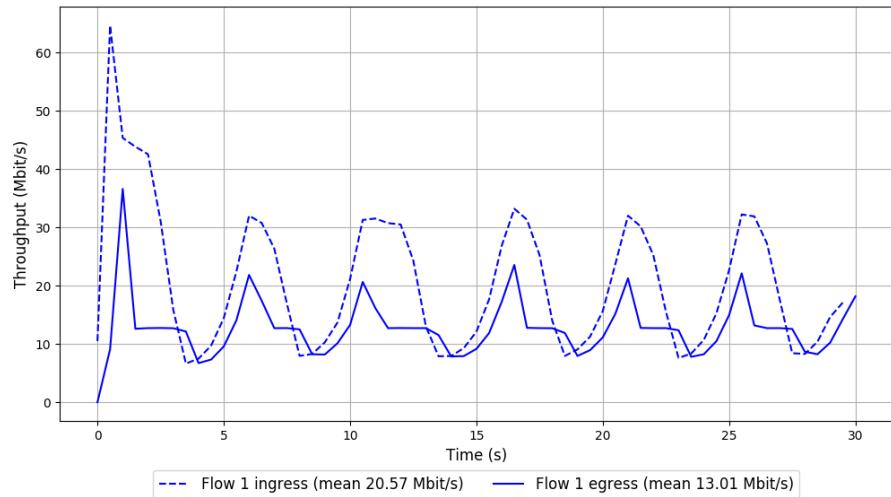


Run 3: Statistics of PCC-Expr

```
Start at: 2018-11-15 03:09:07
End at: 2018-11-15 03:09:37
Local clock offset: 2.643 ms
Remote clock offset: -2.791 ms

# Below is generated by plot.py at 2018-11-15 04:05:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.01 Mbit/s
95th percentile per-packet one-way delay: 30.999 ms
Loss rate: 36.73%
-- Flow 1:
Average throughput: 13.01 Mbit/s
95th percentile per-packet one-way delay: 30.999 ms
Loss rate: 36.73%
```

Run 3: Report of PCC-Expr — Data Link

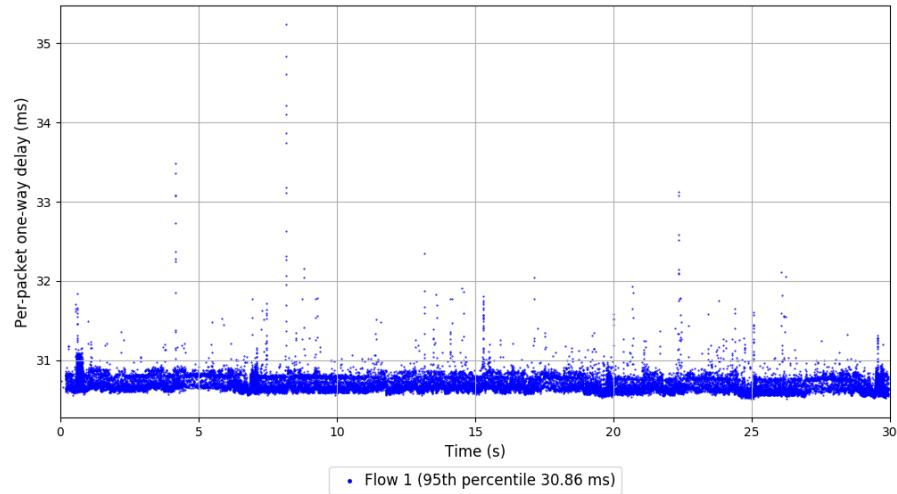
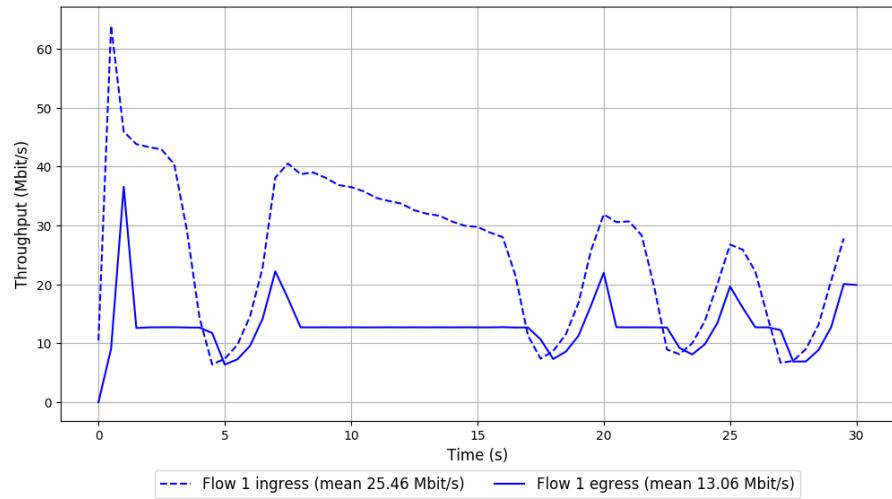


Run 4: Statistics of PCC-Expr

```
Start at: 2018-11-15 03:33:00
End at: 2018-11-15 03:33:30
Local clock offset: 1.9 ms
Remote clock offset: -2.591 ms

# Below is generated by plot.py at 2018-11-15 04:05:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.859 ms
Loss rate: 48.70%
-- Flow 1:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.859 ms
Loss rate: 48.70%
```

Run 4: Report of PCC-Expr — Data Link

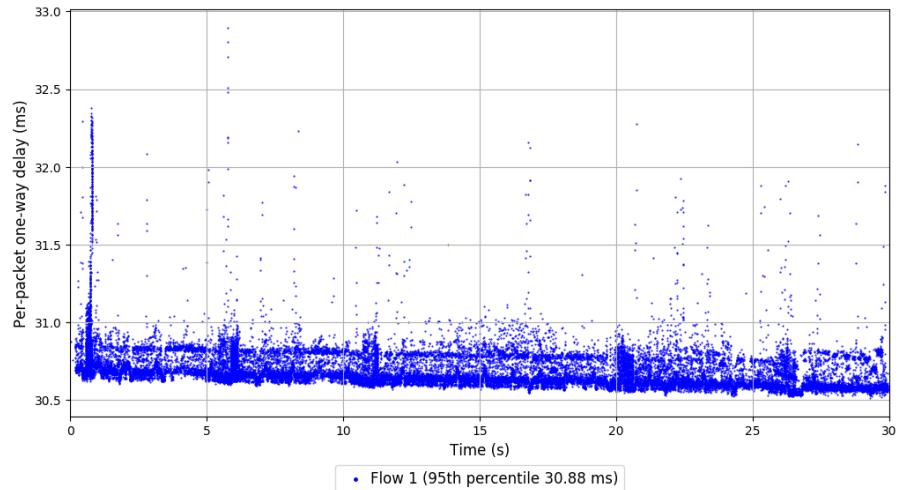
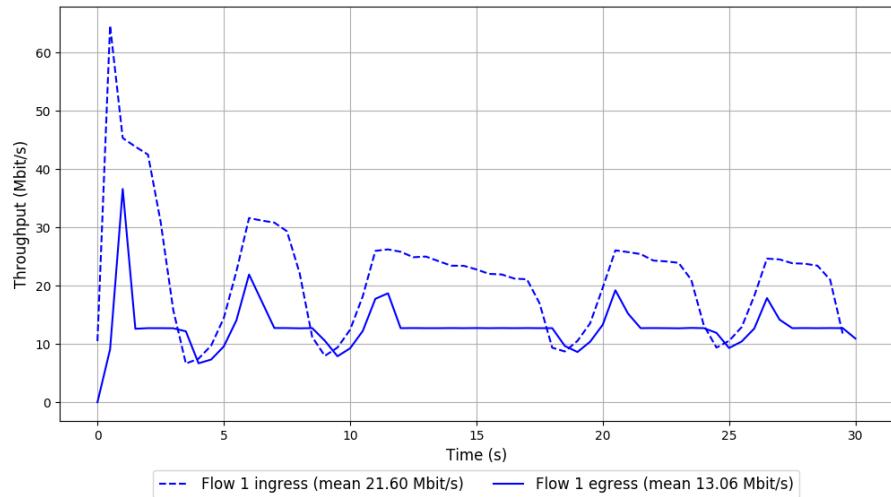


Run 5: Statistics of PCC-Expr

```
Start at: 2018-11-15 03:56:36
End at: 2018-11-15 03:57:06
Local clock offset: 1.764 ms
Remote clock offset: -1.533 ms

# Below is generated by plot.py at 2018-11-15 04:05:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.880 ms
Loss rate: 39.57%
-- Flow 1:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.880 ms
Loss rate: 39.57%
```

Run 5: Report of PCC-Expr — Data Link

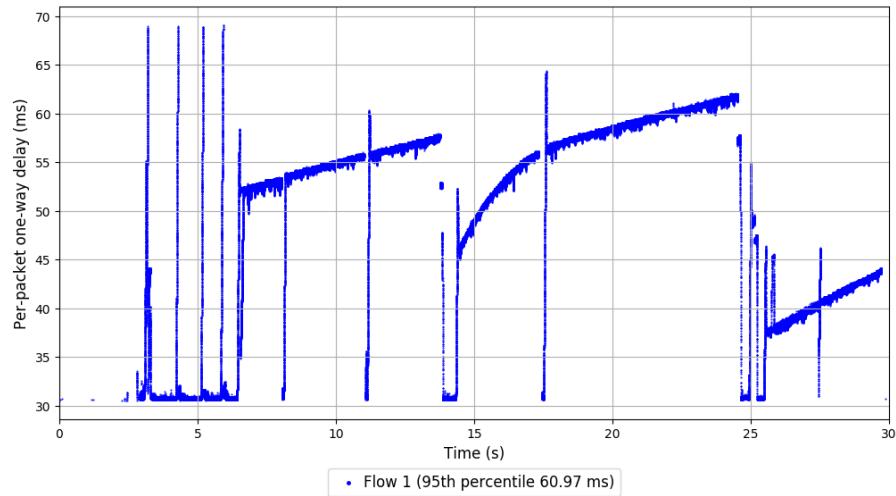
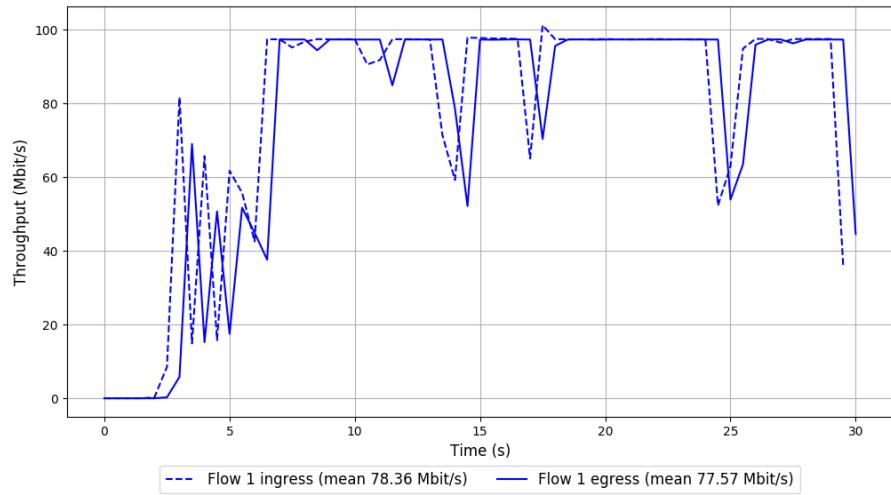


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2018-11-15 02:17:33
End at: 2018-11-15 02:18:03
Local clock offset: 2.125 ms
Remote clock offset: -3.87 ms

# Below is generated by plot.py at 2018-11-15 04:06:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.57 Mbit/s
95th percentile per-packet one-way delay: 60.965 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 77.57 Mbit/s
95th percentile per-packet one-way delay: 60.965 ms
Loss rate: 1.01%
```

Run 1: Report of QUIC Cubic — Data Link

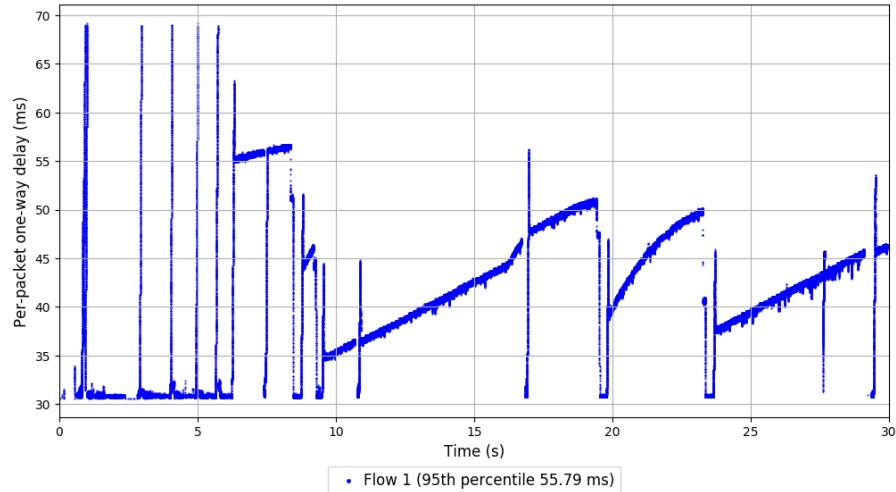
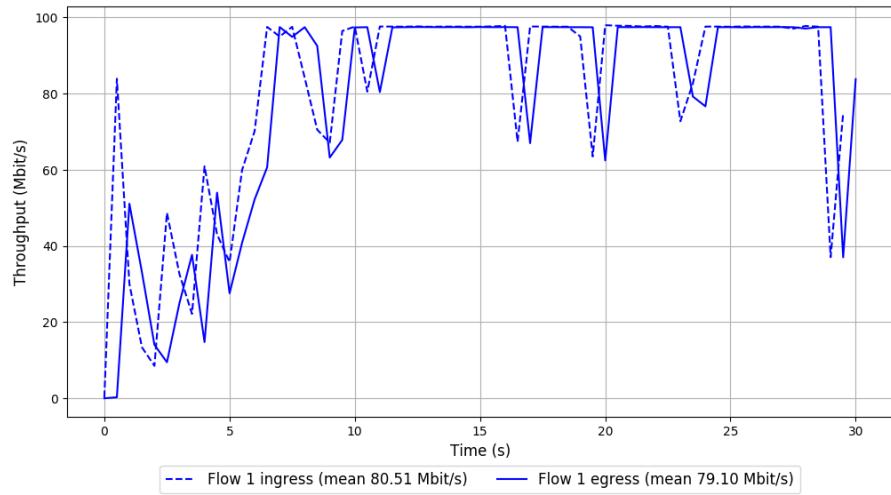


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-11-15 02:42:04
End at: 2018-11-15 02:42:34
Local clock offset: 3.494 ms
Remote clock offset: -3.457 ms

# Below is generated by plot.py at 2018-11-15 04:06:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.10 Mbit/s
95th percentile per-packet one-way delay: 55.793 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 79.10 Mbit/s
95th percentile per-packet one-way delay: 55.793 ms
Loss rate: 1.70%
```

Run 2: Report of QUIC Cubic — Data Link

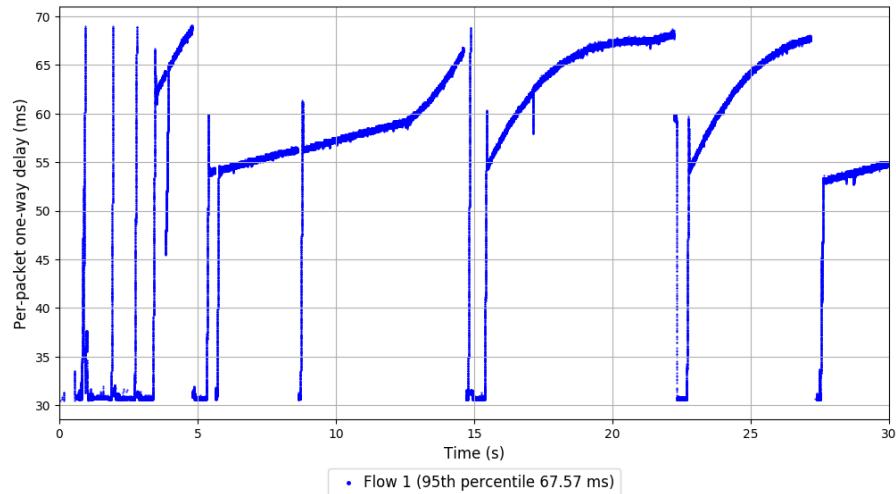
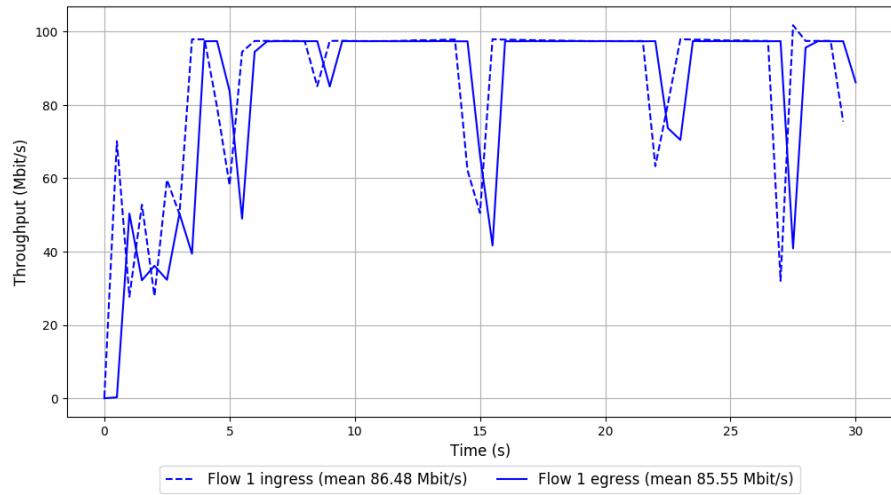


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-11-15 03:06:21
End at: 2018-11-15 03:06:51
Local clock offset: 2.857 ms
Remote clock offset: -2.917 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.55 Mbit/s
95th percentile per-packet one-way delay: 67.569 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 85.55 Mbit/s
95th percentile per-packet one-way delay: 67.569 ms
Loss rate: 0.99%
```

Run 3: Report of QUIC Cubic — Data Link

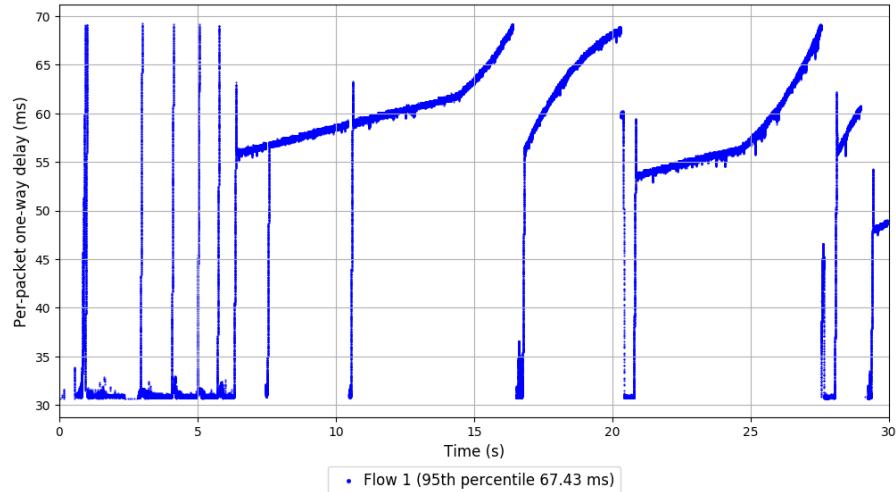
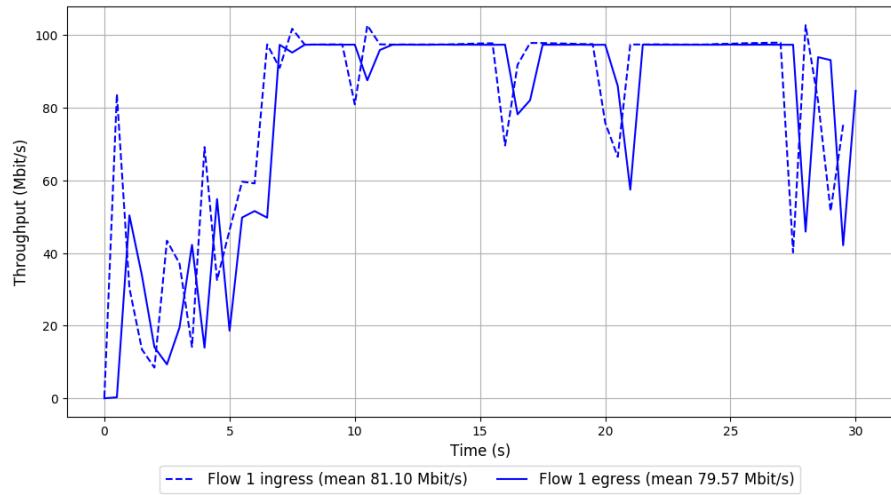


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-11-15 03:30:20
End at: 2018-11-15 03:30:50
Local clock offset: 2.281 ms
Remote clock offset: -2.449 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.57 Mbit/s
95th percentile per-packet one-way delay: 67.431 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 79.57 Mbit/s
95th percentile per-packet one-way delay: 67.431 ms
Loss rate: 1.83%
```

Run 4: Report of QUIC Cubic — Data Link

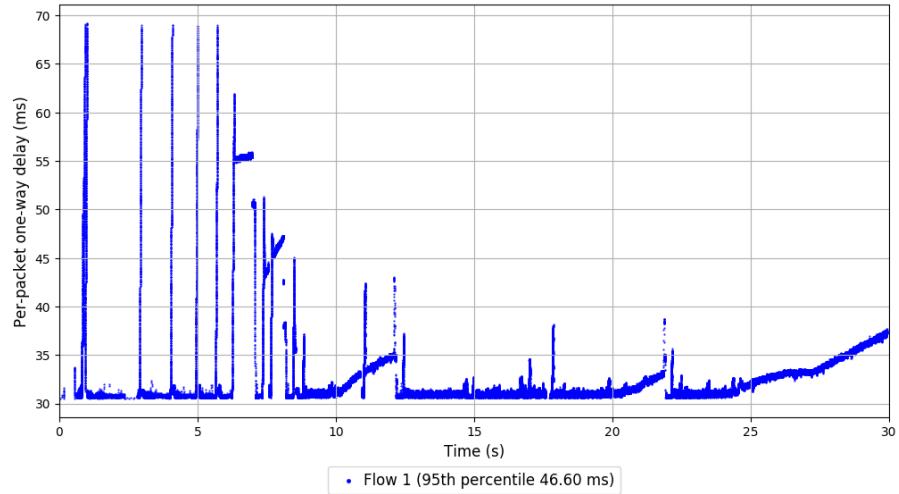
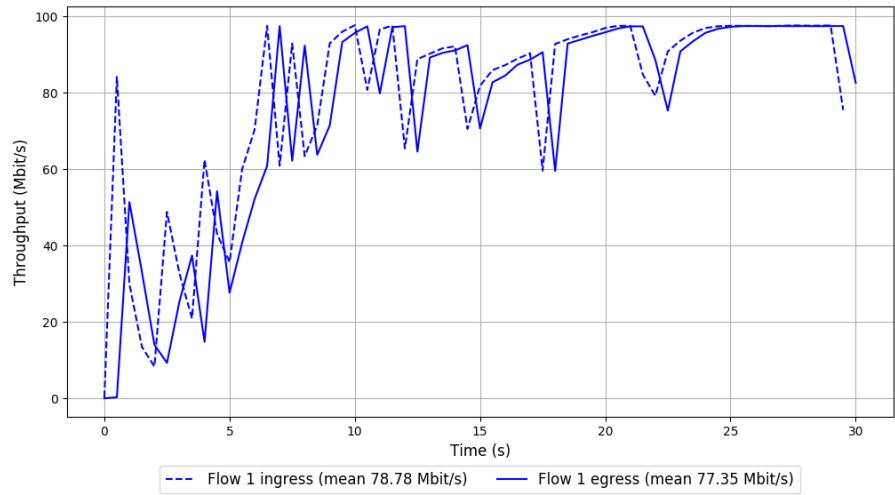


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-11-15 03:53:57
End at: 2018-11-15 03:54:27
Local clock offset: 1.631 ms
Remote clock offset: -1.786 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.35 Mbit/s
95th percentile per-packet one-way delay: 46.604 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 77.35 Mbit/s
95th percentile per-packet one-way delay: 46.604 ms
Loss rate: 1.79%
```

Run 5: Report of QUIC Cubic — Data Link

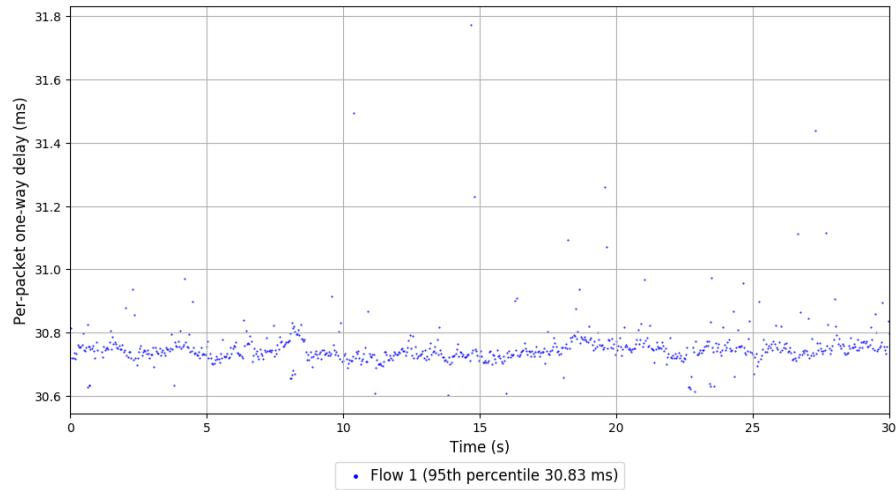
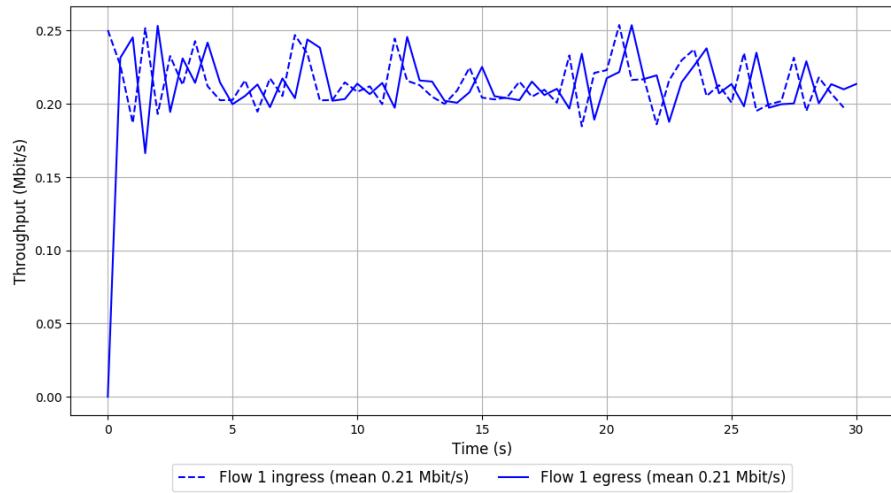


Run 1: Statistics of SCReAM

```
Start at: 2018-11-15 02:00:39
End at: 2018-11-15 02:01:10
Local clock offset: 1.129 ms
Remote clock offset: -4.064 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.826 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.826 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

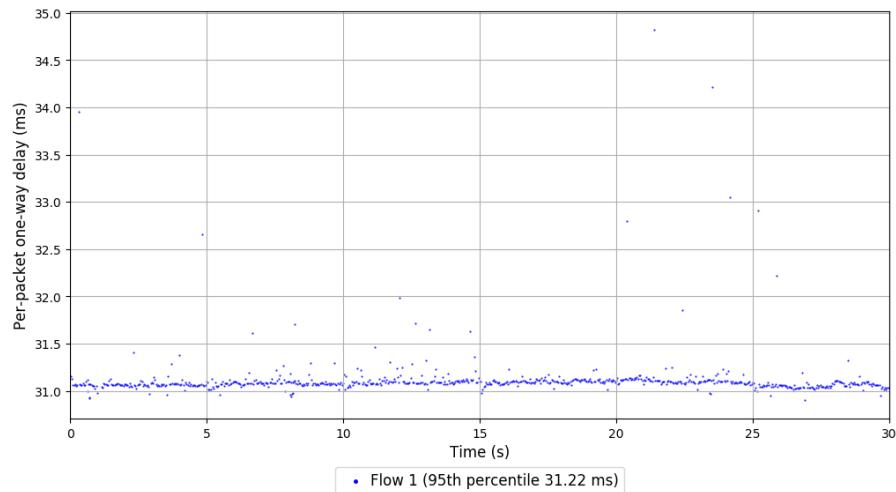
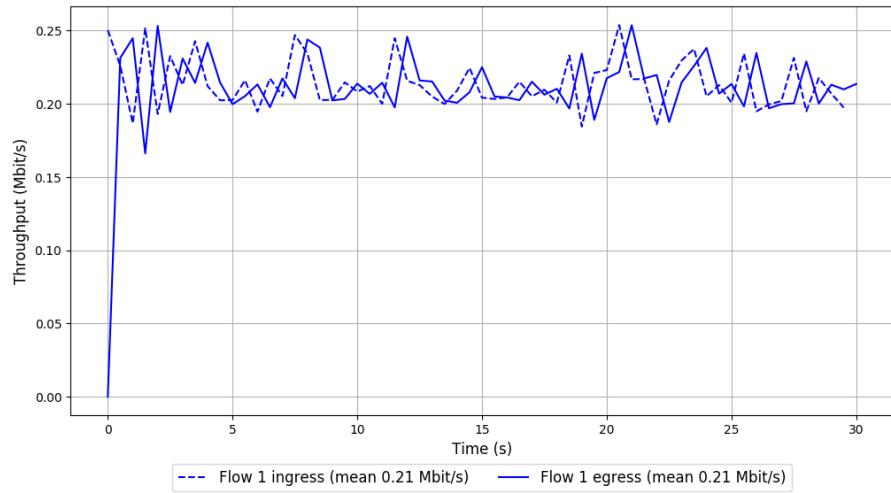


Run 2: Statistics of SCReAM

```
Start at: 2018-11-15 02:26:04
End at: 2018-11-15 02:26:34
Local clock offset: 3.192 ms
Remote clock offset: -3.646 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.216 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

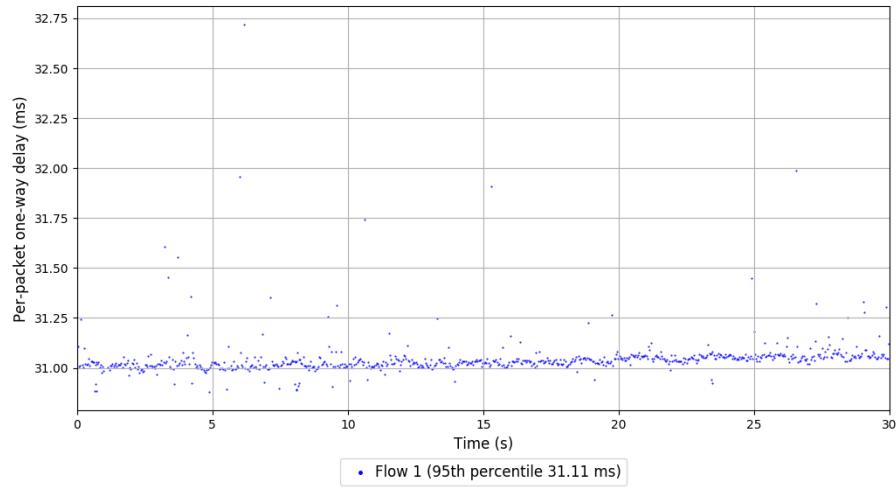
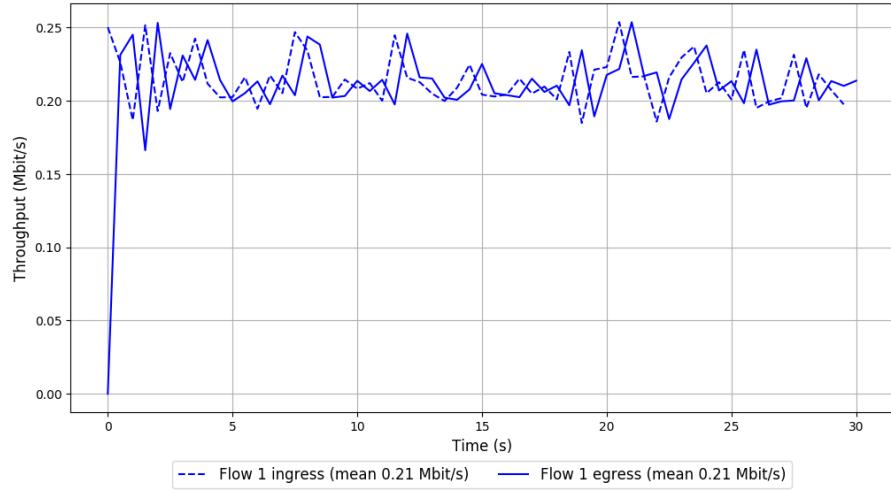


Run 3: Statistics of SCReAM

```
Start at: 2018-11-15 02:50:10
End at: 2018-11-15 02:50:40
Local clock offset: 4.56 ms
Remote clock offset: -3.316 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.114 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.114 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

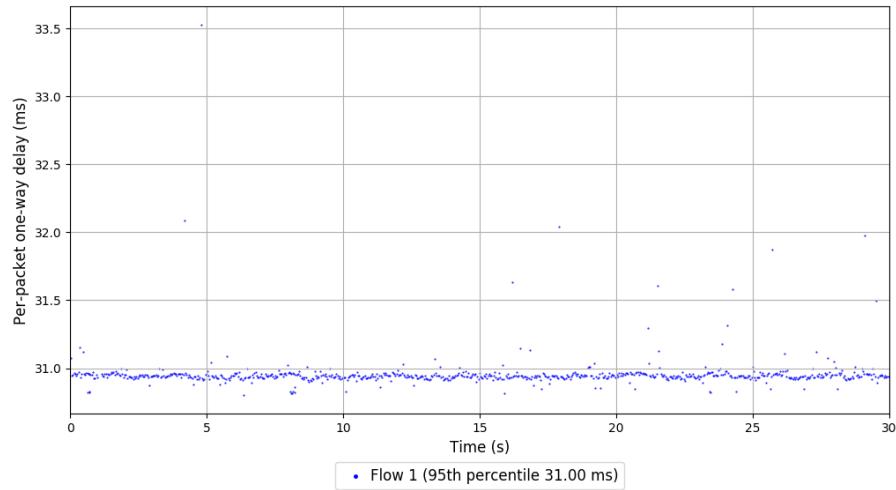
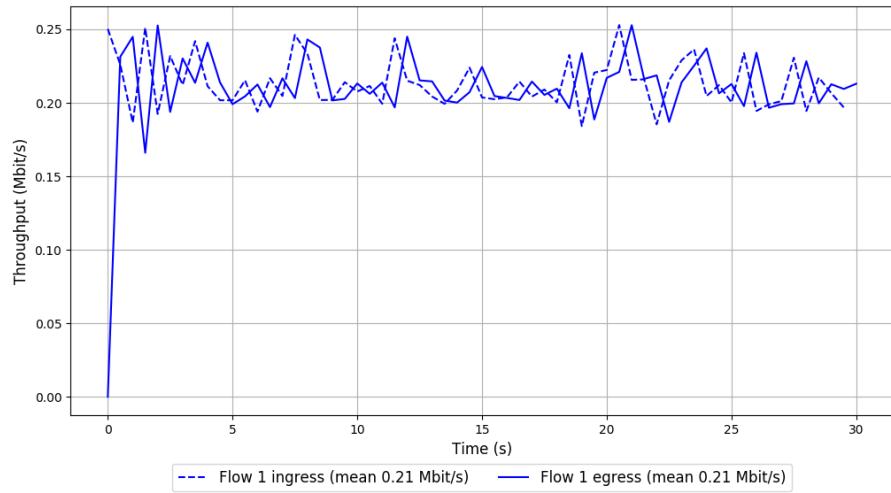


Run 4: Statistics of SCReAM

```
Start at: 2018-11-15 03:14:32
End at: 2018-11-15 03:15:02
Local clock offset: 2.543 ms
Remote clock offset: -2.727 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.002 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.002 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

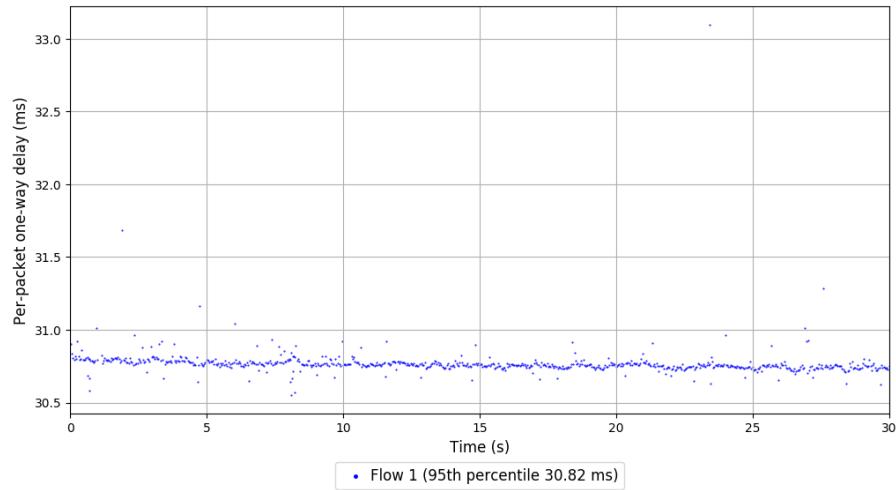
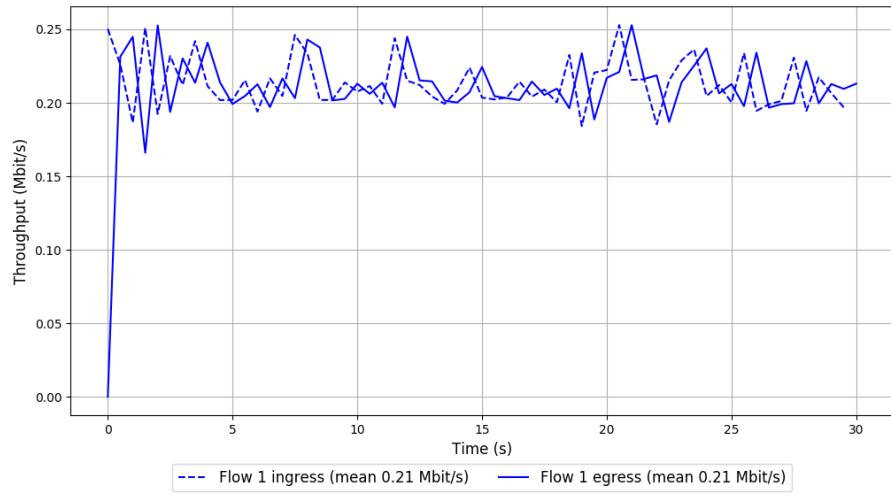


Run 5: Statistics of SCReAM

```
Start at: 2018-11-15 03:38:17
End at: 2018-11-15 03:38:47
Local clock offset: 1.432 ms
Remote clock offset: -2.493 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.821 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.821 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

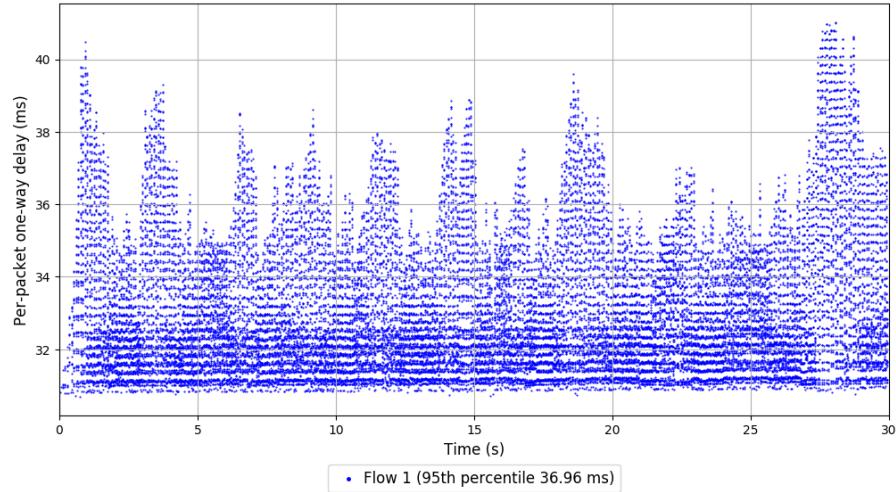
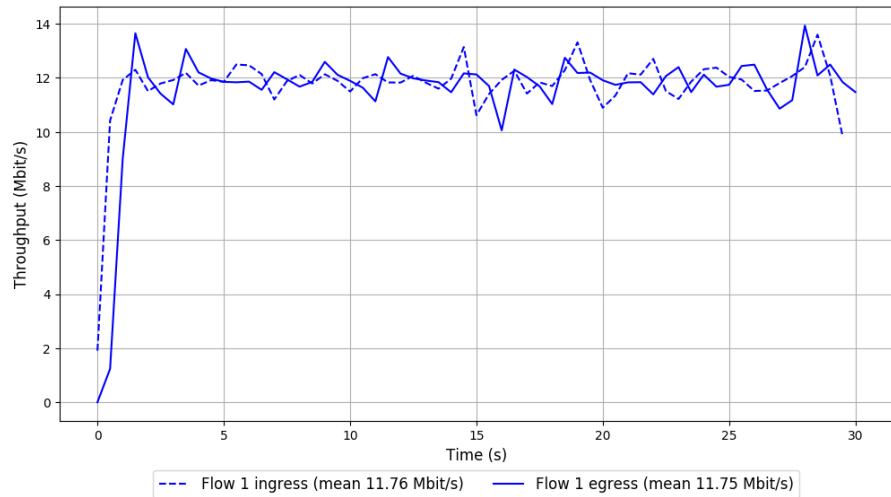


Run 1: Statistics of Sprout

```
Start at: 2018-11-15 02:09:35
End at: 2018-11-15 02:10:05
Local clock offset: 1.888 ms
Remote clock offset: -4.036 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.75 Mbit/s
95th percentile per-packet one-way delay: 36.959 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 11.75 Mbit/s
95th percentile per-packet one-way delay: 36.959 ms
Loss rate: 0.11%
```

Run 1: Report of Sprout — Data Link

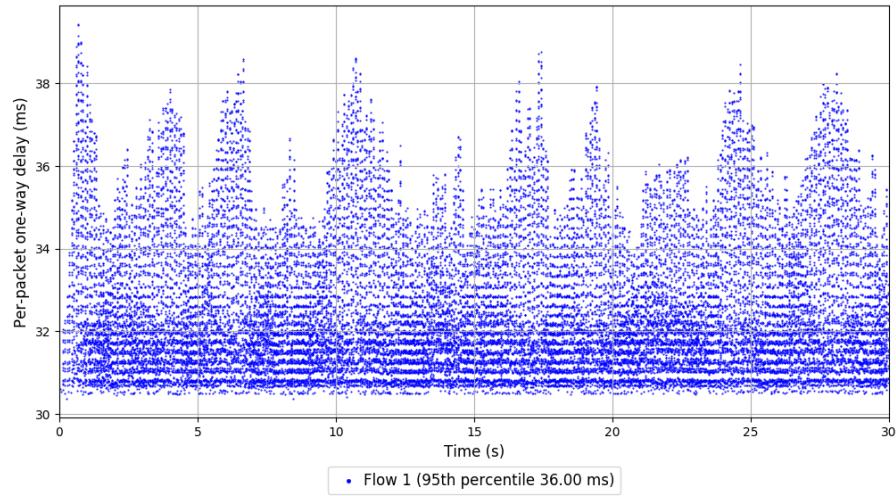
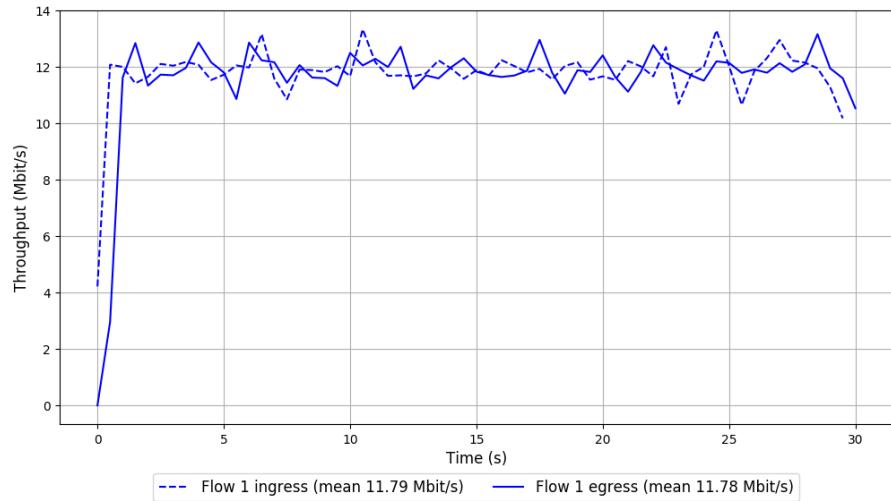


Run 2: Statistics of Sprout

```
Start at: 2018-11-15 02:34:07
End at: 2018-11-15 02:34:37
Local clock offset: 2.934 ms
Remote clock offset: -3.794 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.78 Mbit/s
95th percentile per-packet one-way delay: 35.998 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 11.78 Mbit/s
95th percentile per-packet one-way delay: 35.998 ms
Loss rate: 0.02%
```

Run 2: Report of Sprout — Data Link

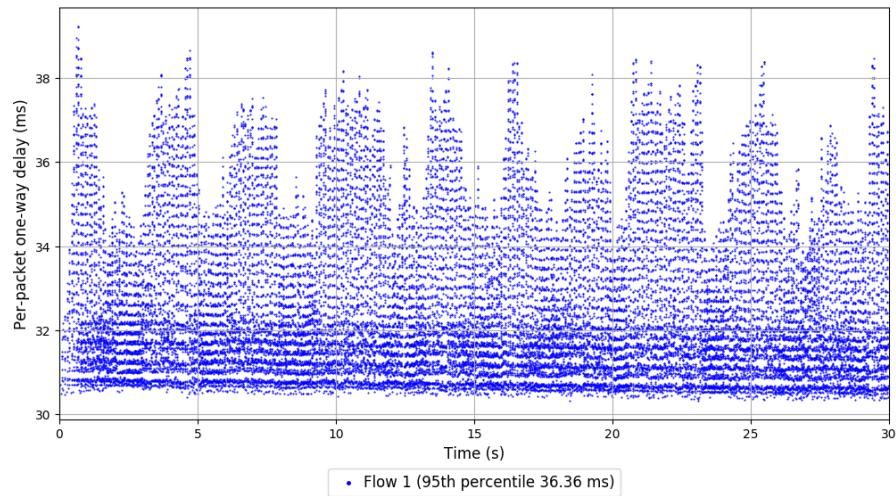
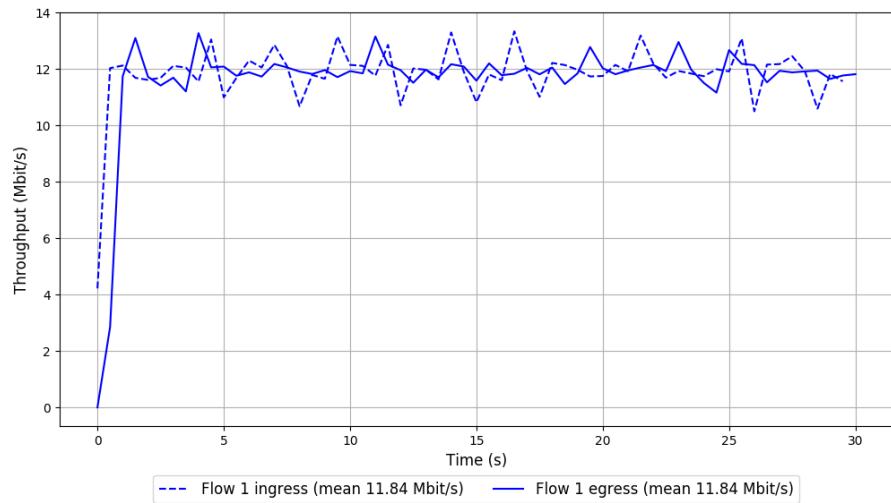


Run 3: Statistics of Sprout

```
Start at: 2018-11-15 02:58:23
End at: 2018-11-15 02:58:53
Local clock offset: 4.907 ms
Remote clock offset: -3.091 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 36.359 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 36.359 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

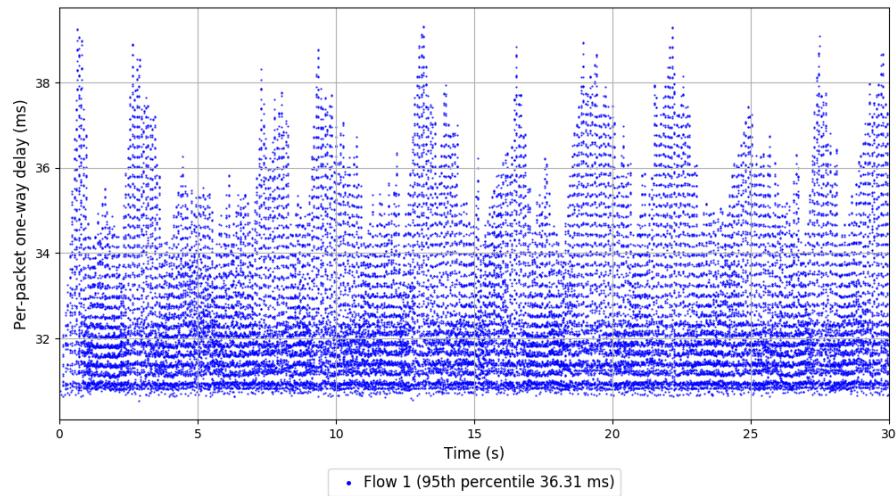
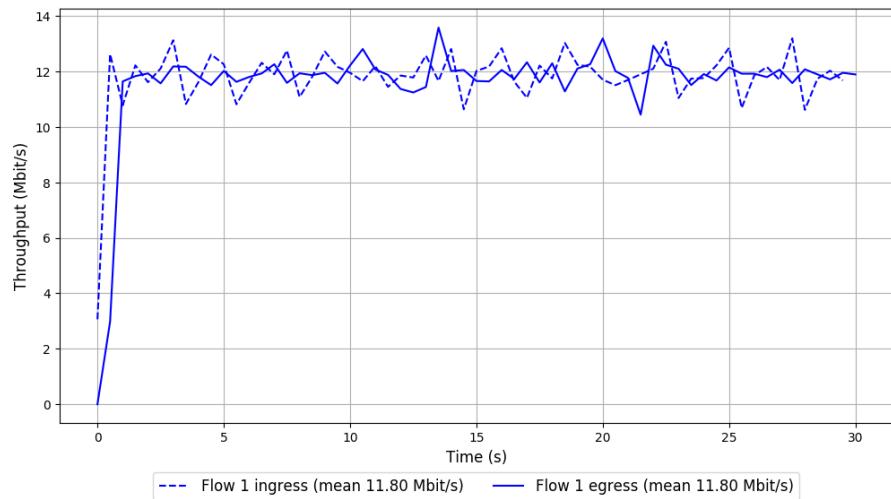


Run 4: Statistics of Sprout

```
Start at: 2018-11-15 03:22:31
End at: 2018-11-15 03:23:01
Local clock offset: 2.834 ms
Remote clock offset: -2.844 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 36.308 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 36.308 ms
Loss rate: 0.05%
```

Run 4: Report of Sprout — Data Link

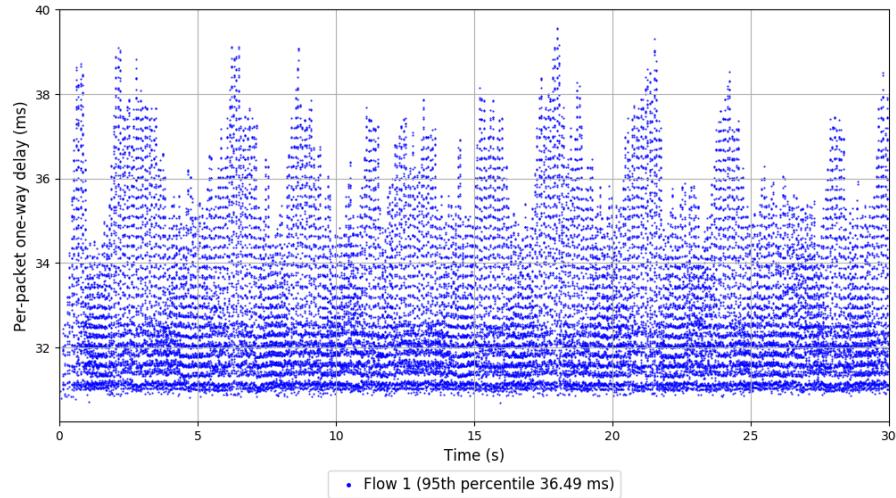
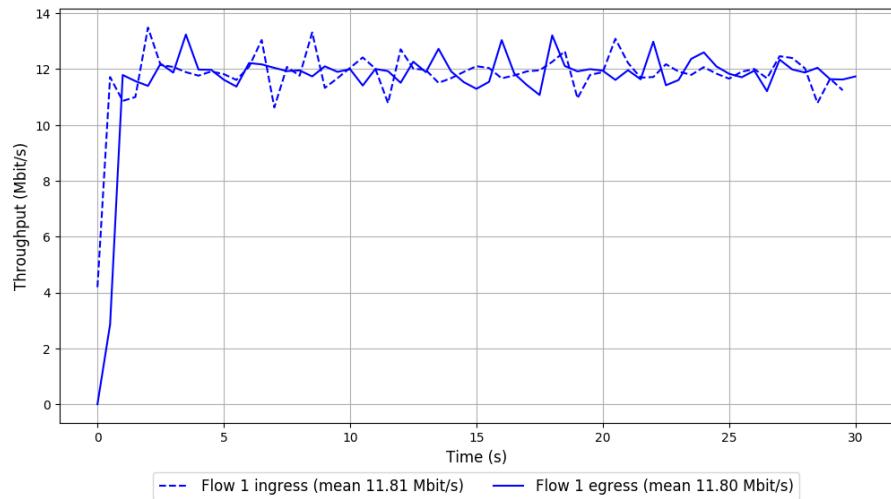


Run 5: Statistics of Sprout

```
Start at: 2018-11-15 03:46:10
End at: 2018-11-15 03:46:40
Local clock offset: 1.325 ms
Remote clock offset: -2.072 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 36.495 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 36.495 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link

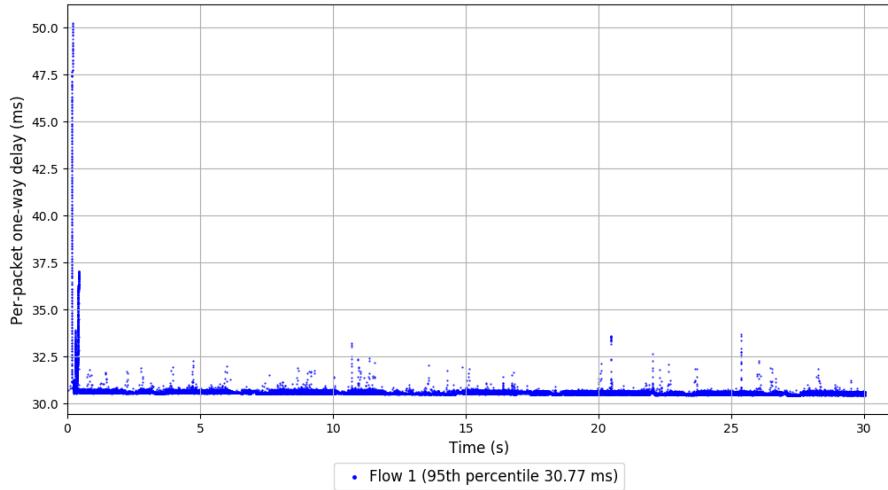
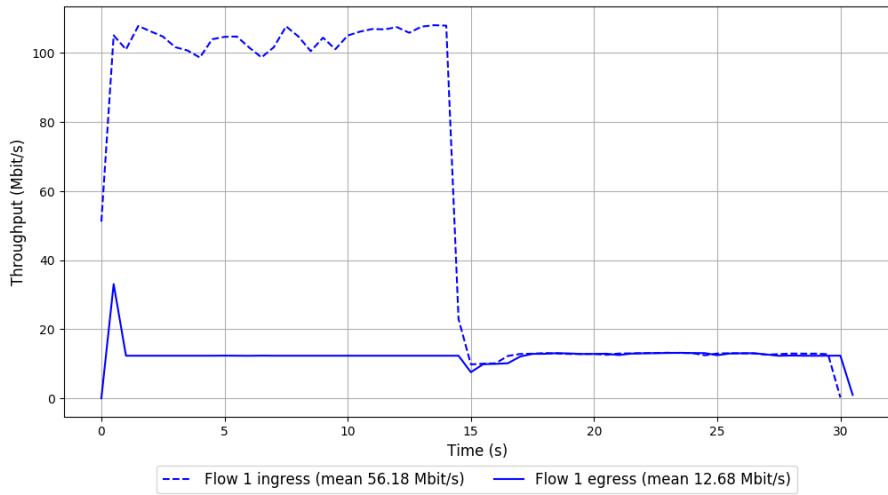


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-11-15 02:13:29
End at: 2018-11-15 02:13:59
Local clock offset: 2.648 ms
Remote clock offset: -3.886 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 30.774 ms
Loss rate: 77.43%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 30.774 ms
Loss rate: 77.43%
```

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

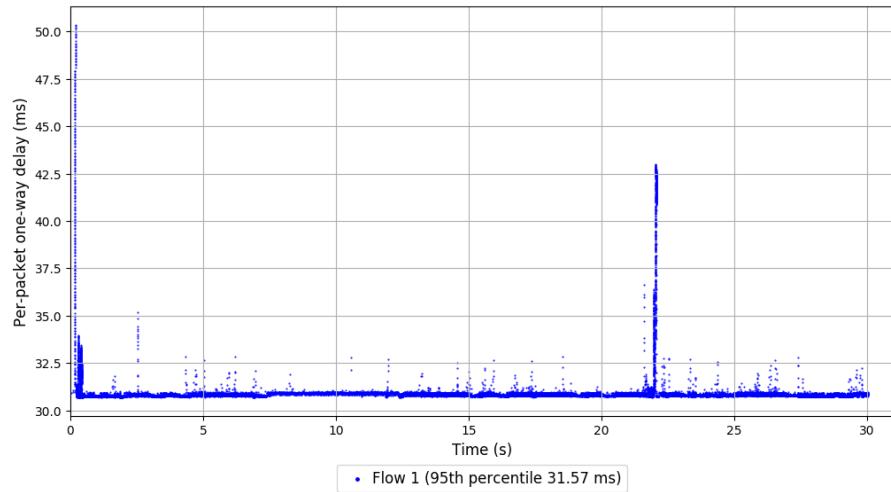
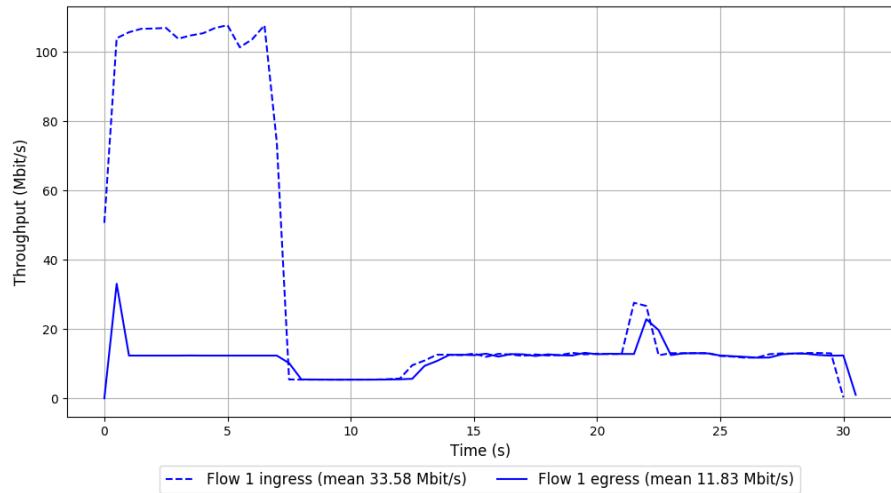


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-11-15 02:38:00
End at: 2018-11-15 02:38:30
Local clock offset: 3.114 ms
Remote clock offset: -3.505 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 31.566 ms
Loss rate: 64.78%
-- Flow 1:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 31.566 ms
Loss rate: 64.78%
```

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

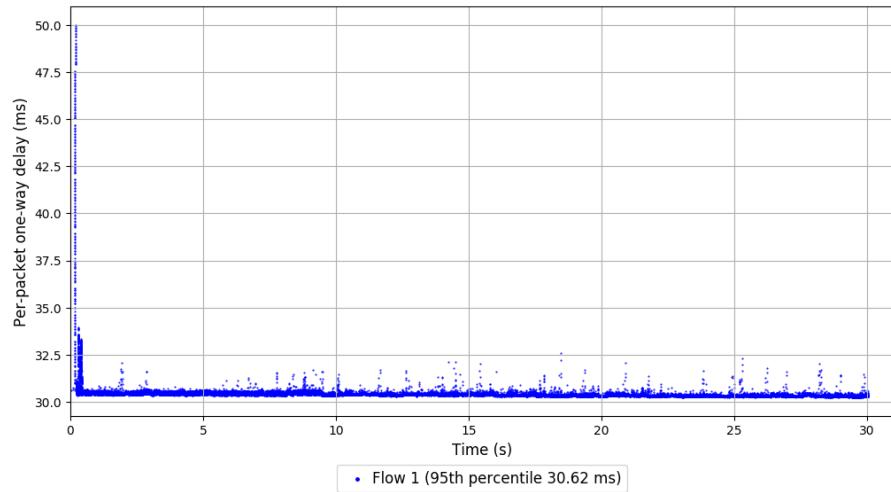
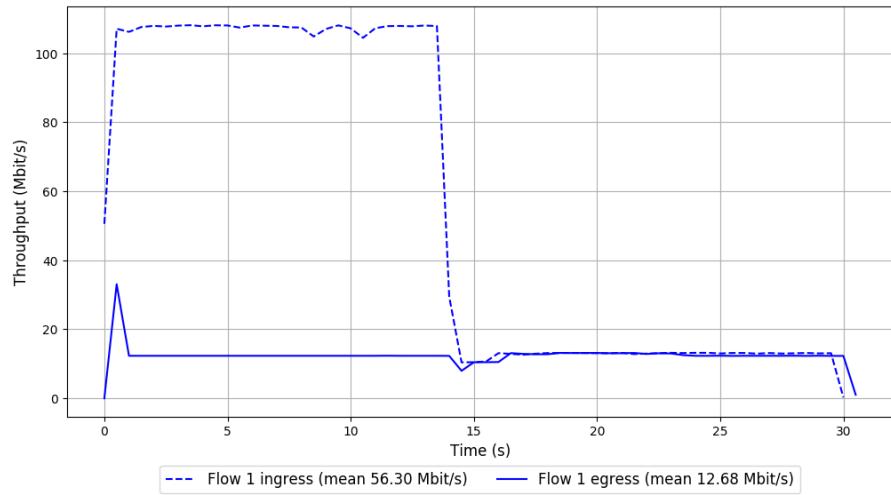


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-11-15 03:02:20
End at: 2018-11-15 03:02:50
Local clock offset: 3.625 ms
Remote clock offset: -3.171 ms

# Below is generated by plot.py at 2018-11-15 04:06:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 30.620 ms
Loss rate: 77.48%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 30.620 ms
Loss rate: 77.48%
```

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

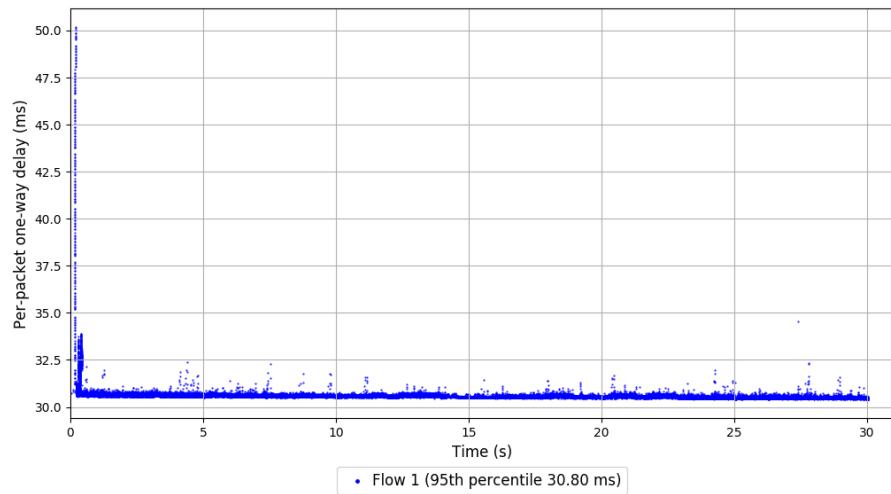
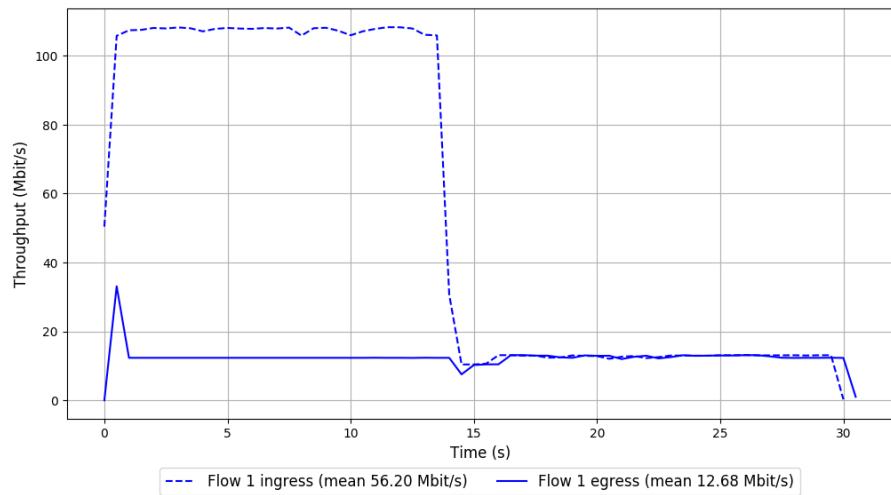


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-11-15 03:26:24
End at: 2018-11-15 03:26:54
Local clock offset: 3.092 ms
Remote clock offset: -2.825 ms

# Below is generated by plot.py at 2018-11-15 04:06:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 30.801 ms
Loss rate: 77.44%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 30.801 ms
Loss rate: 77.44%
```

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

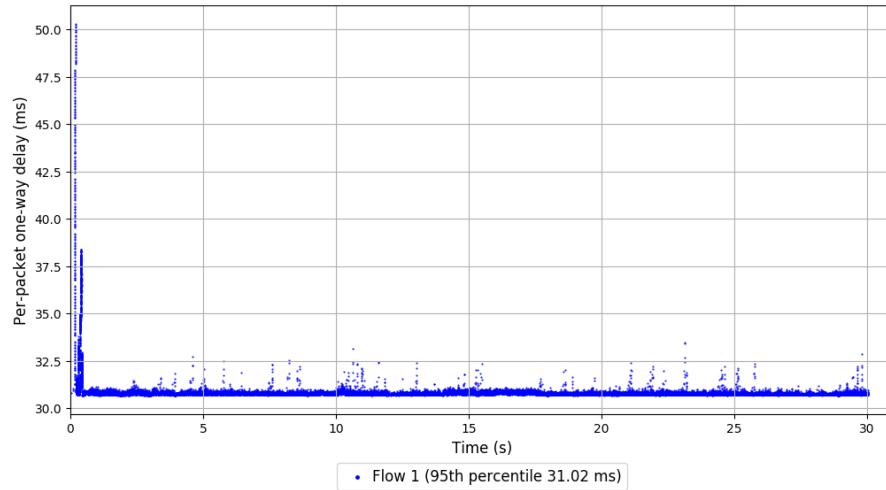
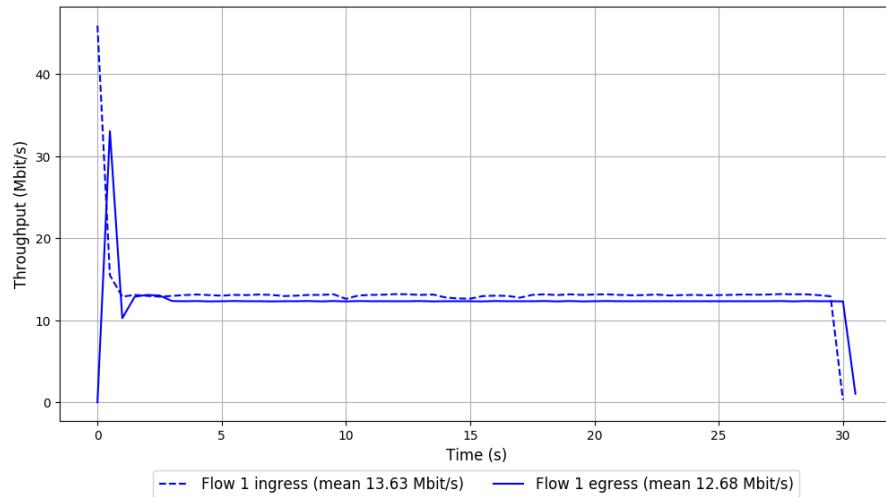


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-11-15 03:50:02
End at: 2018-11-15 03:50:32
Local clock offset: 1.466 ms
Remote clock offset: -1.97 ms

# Below is generated by plot.py at 2018-11-15 04:06:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 31.022 ms
Loss rate: 6.97%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 31.022 ms
Loss rate: 6.97%
```

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

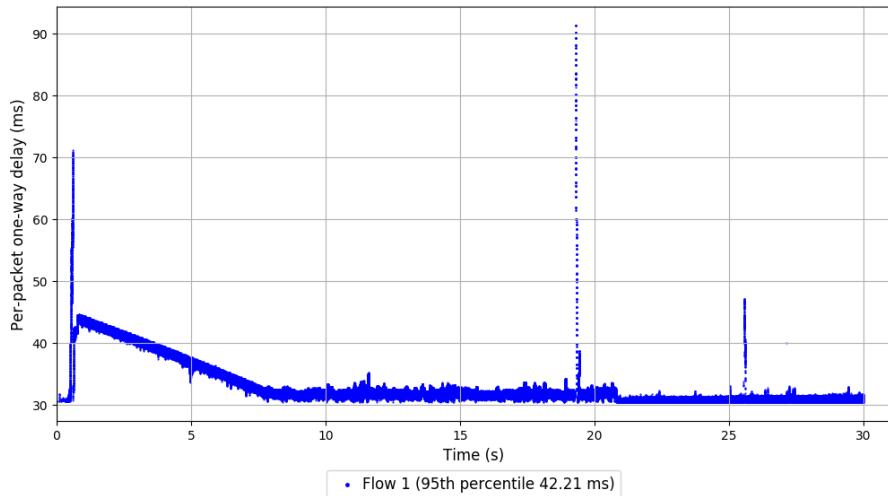
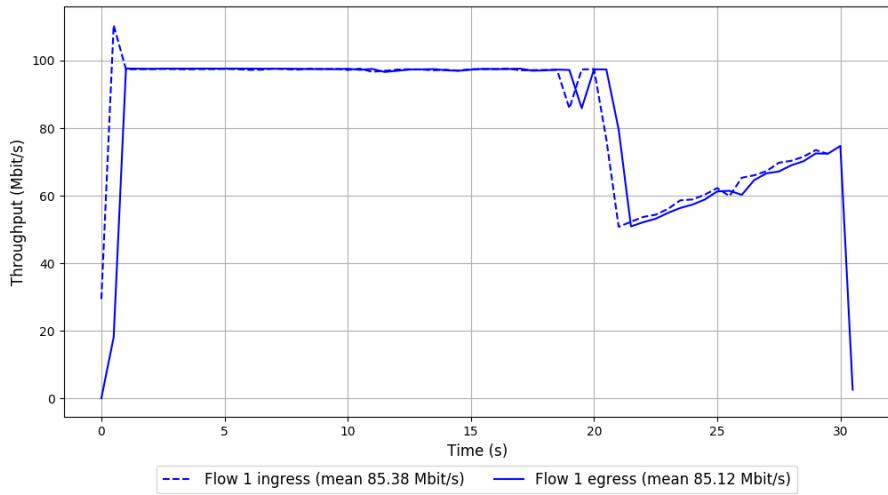


Run 1: Statistics of TCP Vegas

```
Start at: 2018-11-15 02:04:45
End at: 2018-11-15 02:05:15
Local clock offset: 1.776 ms
Remote clock offset: -4.024 ms

# Below is generated by plot.py at 2018-11-15 04:07:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.12 Mbit/s
95th percentile per-packet one-way delay: 42.214 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 85.12 Mbit/s
95th percentile per-packet one-way delay: 42.214 ms
Loss rate: 0.31%
```

Run 1: Report of TCP Vegas — Data Link

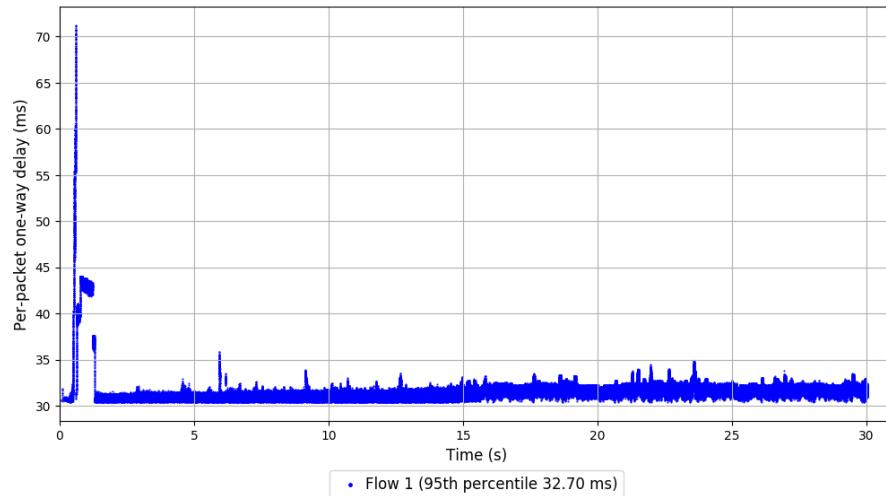
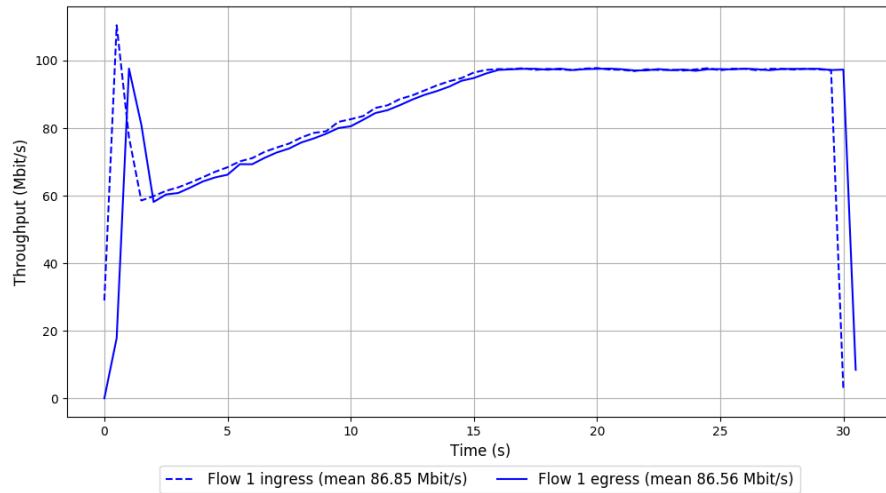


Run 2: Statistics of TCP Vegas

```
Start at: 2018-11-15 02:30:06
End at: 2018-11-15 02:30:36
Local clock offset: 2.973 ms
Remote clock offset: -3.827 ms

# Below is generated by plot.py at 2018-11-15 04:07:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.56 Mbit/s
95th percentile per-packet one-way delay: 32.700 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 86.56 Mbit/s
95th percentile per-packet one-way delay: 32.700 ms
Loss rate: 0.32%
```

Run 2: Report of TCP Vegas — Data Link

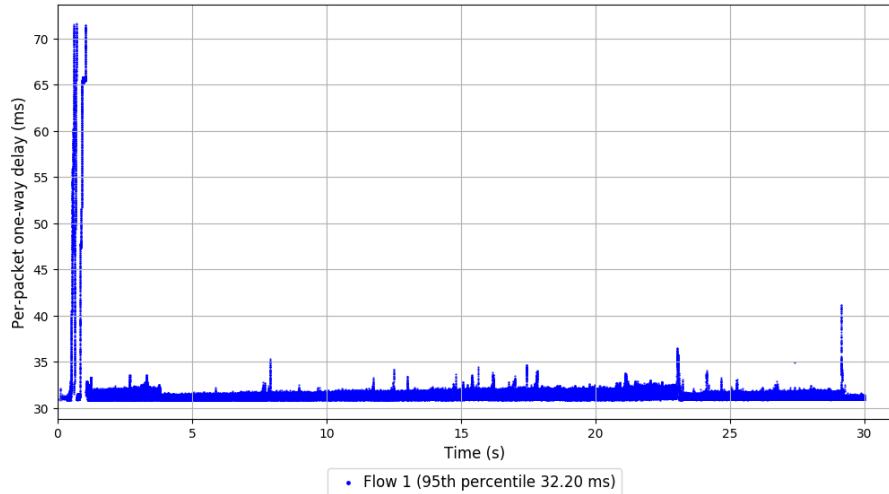
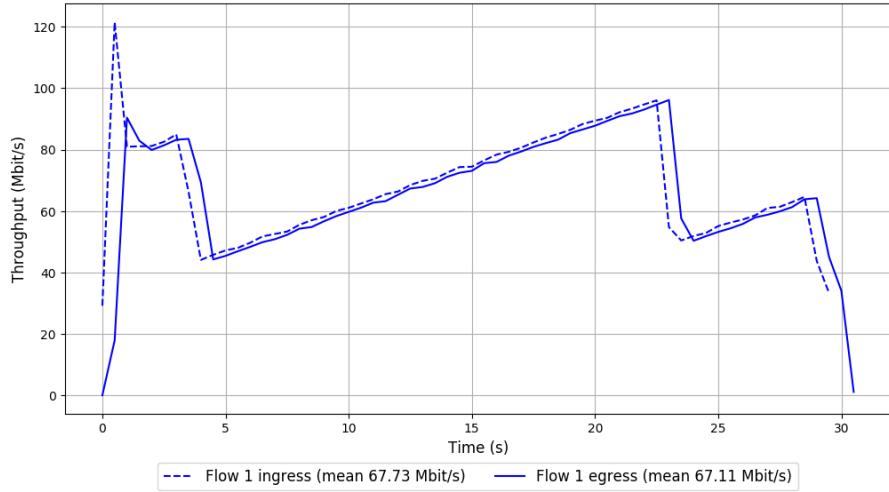


Run 3: Statistics of TCP Vegas

```
Start at: 2018-11-15 02:54:11
End at: 2018-11-15 02:54:41
Local clock offset: 5.187 ms
Remote clock offset: -3.209 ms

# Below is generated by plot.py at 2018-11-15 04:07:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.11 Mbit/s
95th percentile per-packet one-way delay: 32.200 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 67.11 Mbit/s
95th percentile per-packet one-way delay: 32.200 ms
Loss rate: 0.92%
```

Run 3: Report of TCP Vegas — Data Link

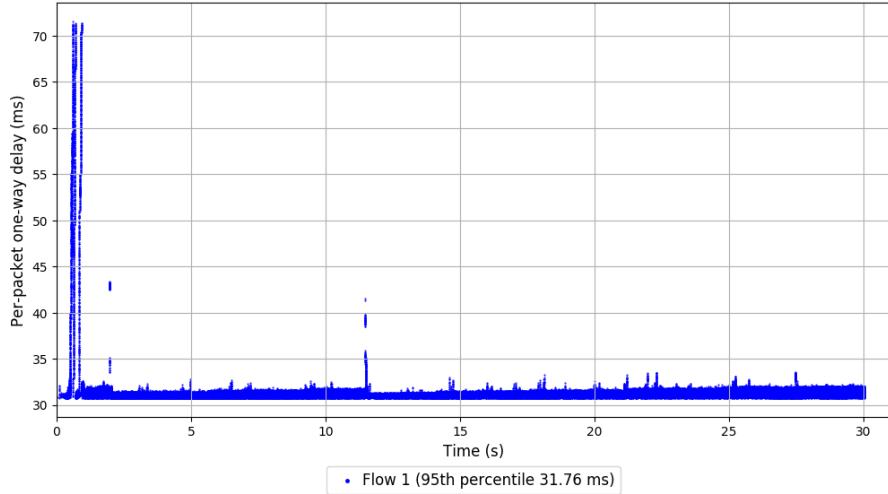
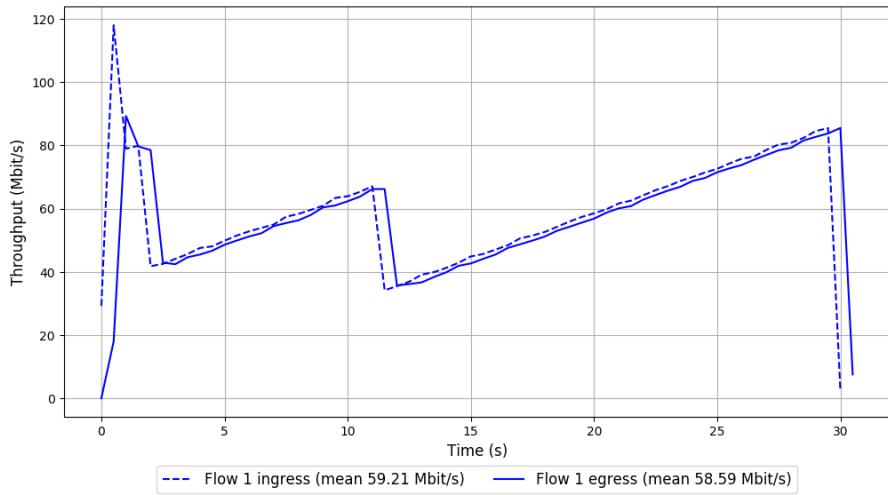


Run 4: Statistics of TCP Vegas

```
Start at: 2018-11-15 03:18:29
End at: 2018-11-15 03:18:59
Local clock offset: 2.62 ms
Remote clock offset: -2.692 ms

# Below is generated by plot.py at 2018-11-15 04:07:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.59 Mbit/s
95th percentile per-packet one-way delay: 31.760 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 58.59 Mbit/s
95th percentile per-packet one-way delay: 31.760 ms
Loss rate: 1.04%
```

Run 4: Report of TCP Vegas — Data Link

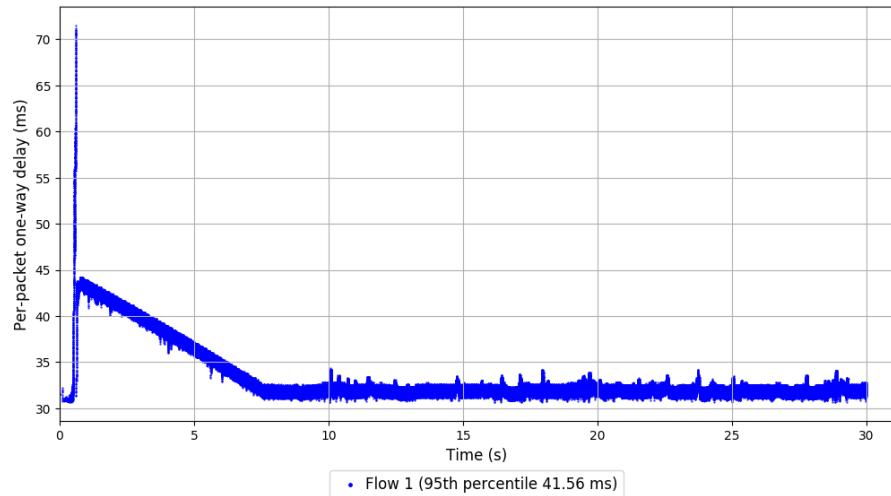
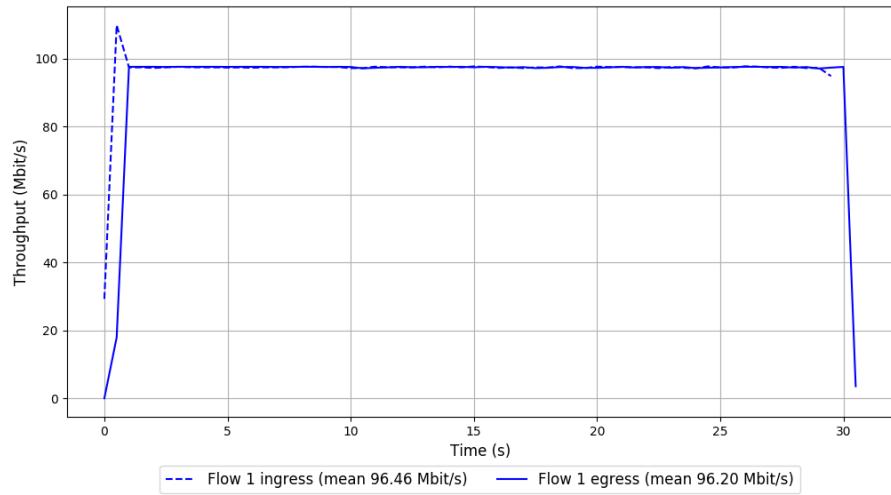


Run 5: Statistics of TCP Vegas

```
Start at: 2018-11-15 03:42:11
End at: 2018-11-15 03:42:41
Local clock offset: 1.328 ms
Remote clock offset: -2.281 ms

# Below is generated by plot.py at 2018-11-15 04:07:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.20 Mbit/s
95th percentile per-packet one-way delay: 41.563 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 96.20 Mbit/s
95th percentile per-packet one-way delay: 41.563 ms
Loss rate: 0.26%
```

Run 5: Report of TCP Vegas — Data Link

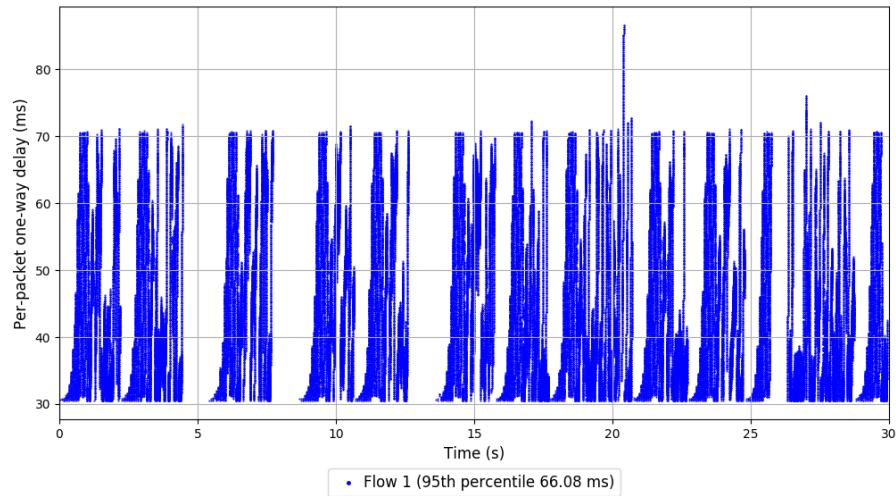
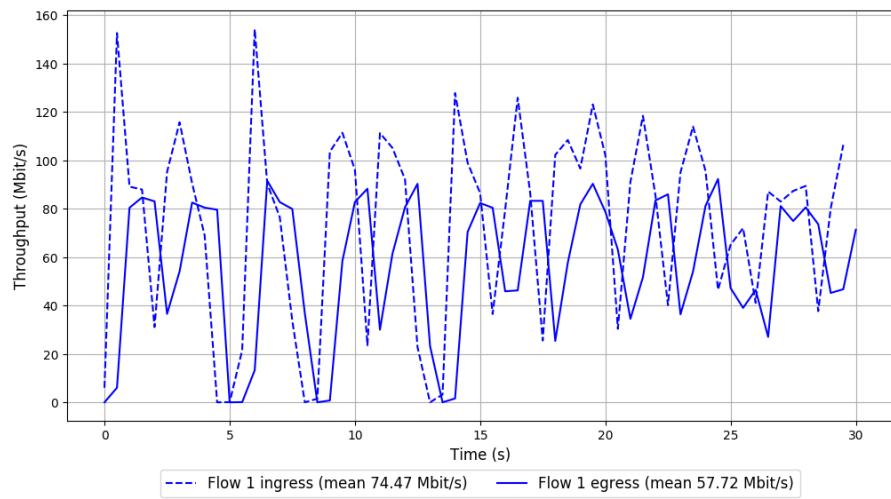


Run 1: Statistics of Verus

```
Start at: 2018-11-15 02:16:13
End at: 2018-11-15 02:16:43
Local clock offset: 2.171 ms
Remote clock offset: -3.99 ms

# Below is generated by plot.py at 2018-11-15 04:07:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.72 Mbit/s
95th percentile per-packet one-way delay: 66.079 ms
Loss rate: 22.46%
-- Flow 1:
Average throughput: 57.72 Mbit/s
95th percentile per-packet one-way delay: 66.079 ms
Loss rate: 22.46%
```

Run 1: Report of Verus — Data Link

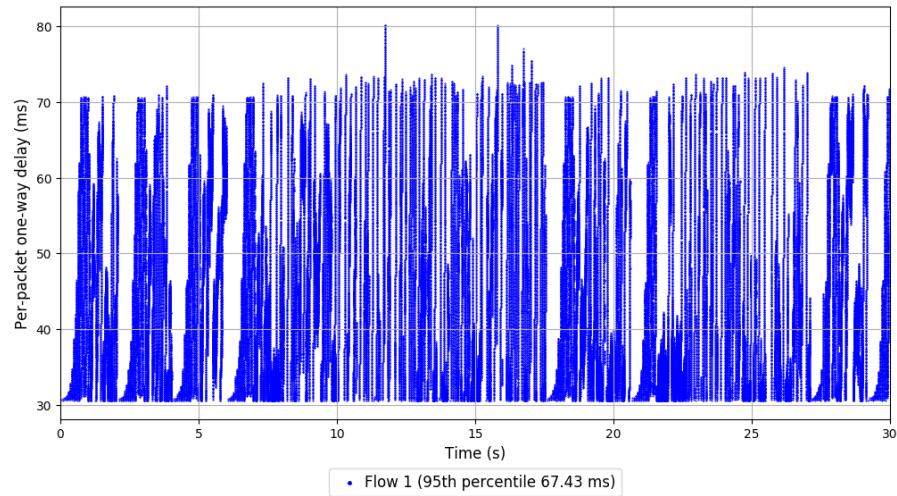
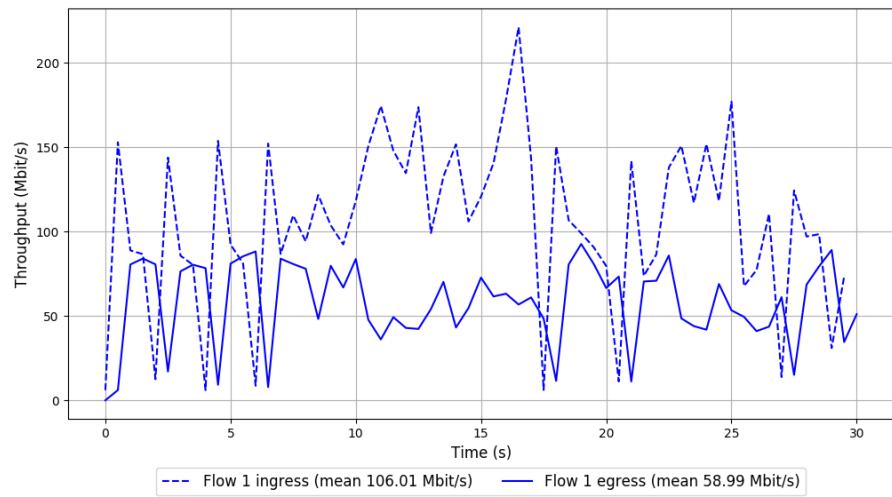


Run 2: Statistics of Verus

```
Start at: 2018-11-15 02:40:42
End at: 2018-11-15 02:41:12
Local clock offset: 3.357 ms
Remote clock offset: -3.597 ms

# Below is generated by plot.py at 2018-11-15 04:07:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.99 Mbit/s
95th percentile per-packet one-way delay: 67.427 ms
Loss rate: 44.31%
-- Flow 1:
Average throughput: 58.99 Mbit/s
95th percentile per-packet one-way delay: 67.427 ms
Loss rate: 44.31%
```

Run 2: Report of Verus — Data Link

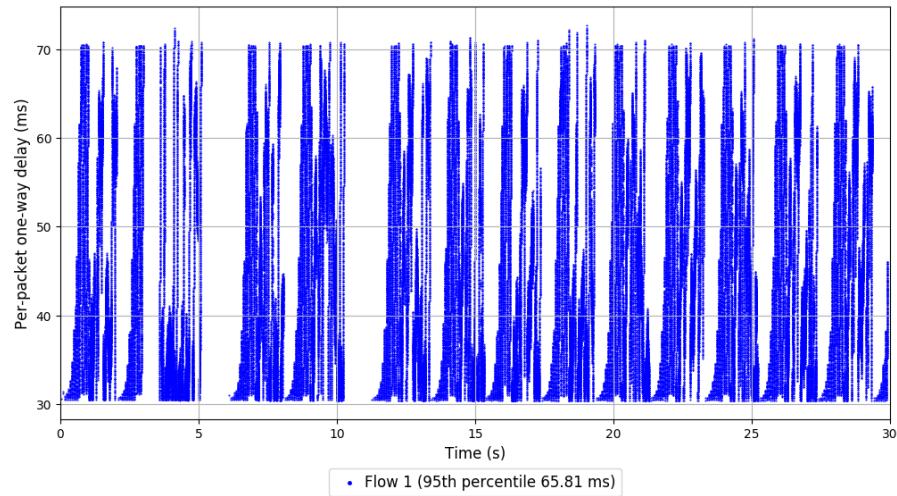
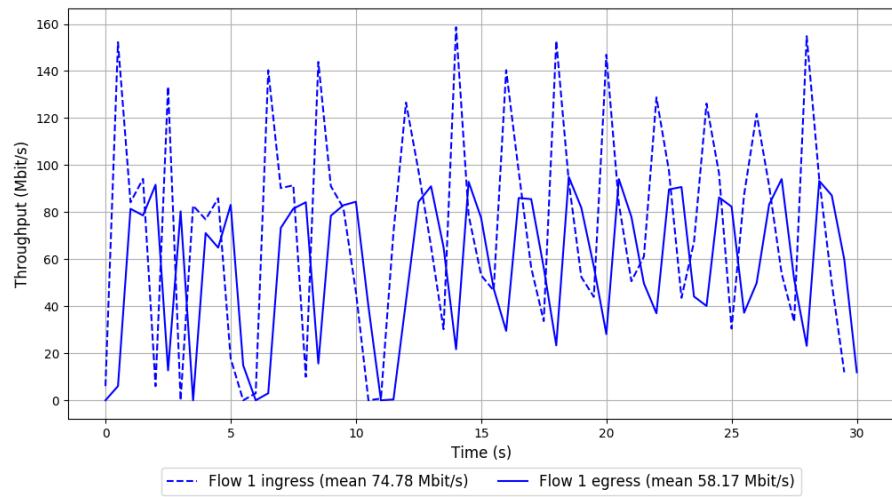


Run 3: Statistics of Verus

```
Start at: 2018-11-15 03:05:00
End at: 2018-11-15 03:05:30
Local clock offset: 3.084 ms
Remote clock offset: -3.119 ms

# Below is generated by plot.py at 2018-11-15 04:07:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.17 Mbit/s
95th percentile per-packet one-way delay: 65.810 ms
Loss rate: 22.17%
-- Flow 1:
Average throughput: 58.17 Mbit/s
95th percentile per-packet one-way delay: 65.810 ms
Loss rate: 22.17%
```

Run 3: Report of Verus — Data Link

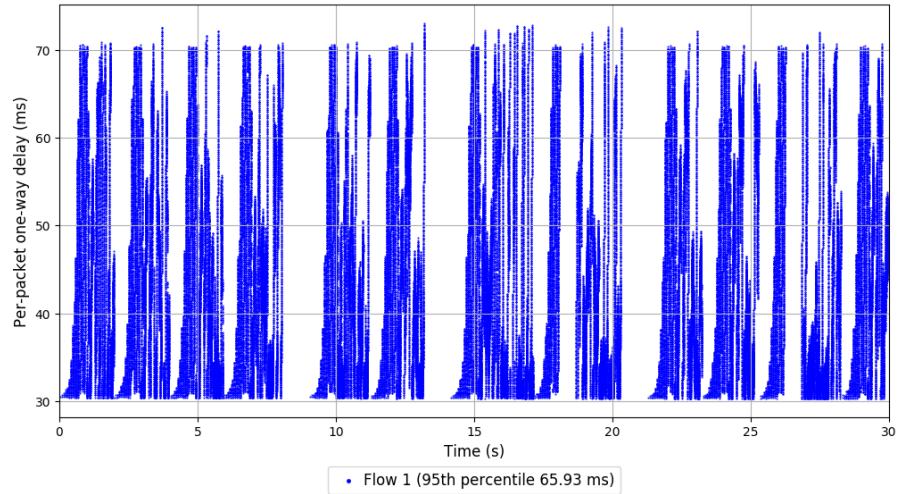
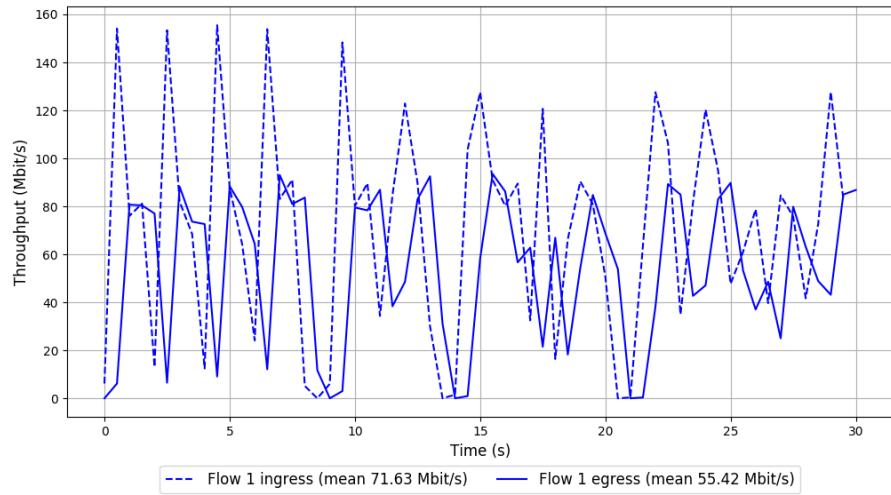


Run 4: Statistics of Verus

```
Start at: 2018-11-15 03:29:00
End at: 2018-11-15 03:29:30
Local clock offset: 2.594 ms
Remote clock offset: -2.785 ms

# Below is generated by plot.py at 2018-11-15 04:08:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.42 Mbit/s
95th percentile per-packet one-way delay: 65.931 ms
Loss rate: 22.58%
-- Flow 1:
Average throughput: 55.42 Mbit/s
95th percentile per-packet one-way delay: 65.931 ms
Loss rate: 22.58%
```

Run 4: Report of Verus — Data Link

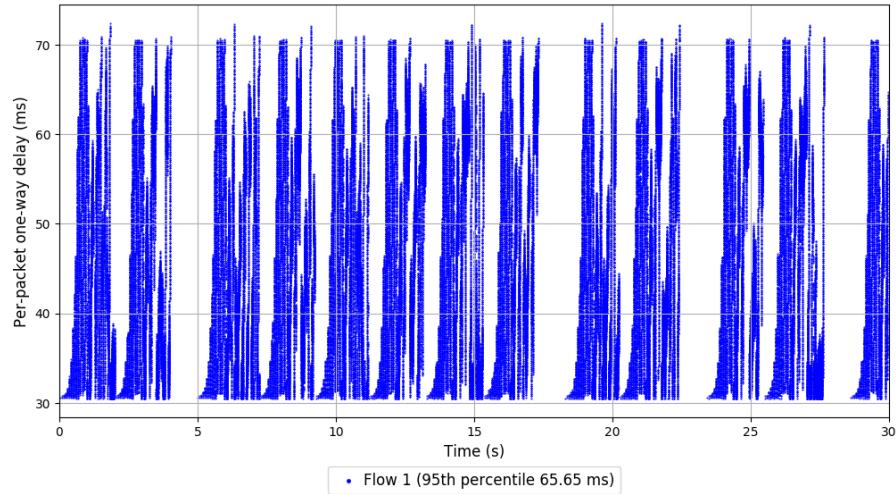
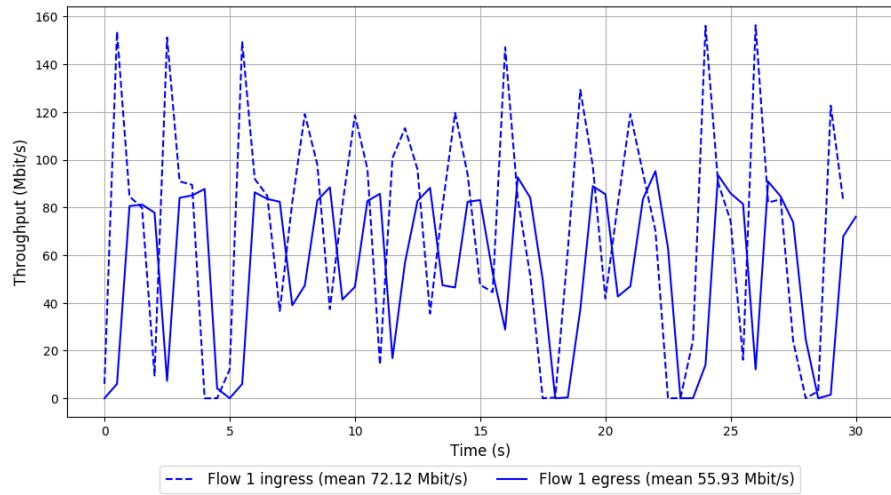


Run 5: Statistics of Verus

```
Start at: 2018-11-15 03:52:38
End at: 2018-11-15 03:53:08
Local clock offset: 1.559 ms
Remote clock offset: -2.039 ms

# Below is generated by plot.py at 2018-11-15 04:08:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.93 Mbit/s
95th percentile per-packet one-way delay: 65.653 ms
Loss rate: 22.37%
-- Flow 1:
Average throughput: 55.93 Mbit/s
95th percentile per-packet one-way delay: 65.653 ms
Loss rate: 22.37%
```

Run 5: Report of Verus — Data Link

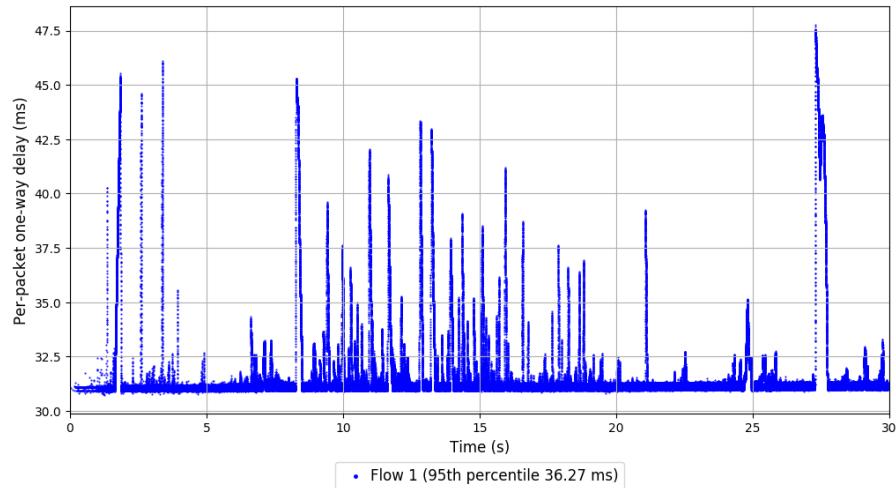
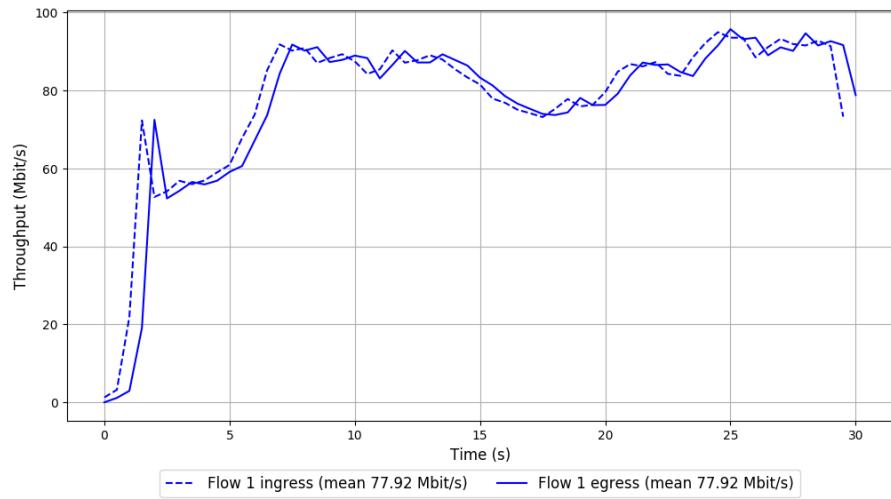


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-11-15 02:21:48
End at: 2018-11-15 02:22:18
Local clock offset: 2.481 ms
Remote clock offset: -3.641 ms

# Below is generated by plot.py at 2018-11-15 04:08:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.92 Mbit/s
95th percentile per-packet one-way delay: 36.274 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 77.92 Mbit/s
95th percentile per-packet one-way delay: 36.274 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

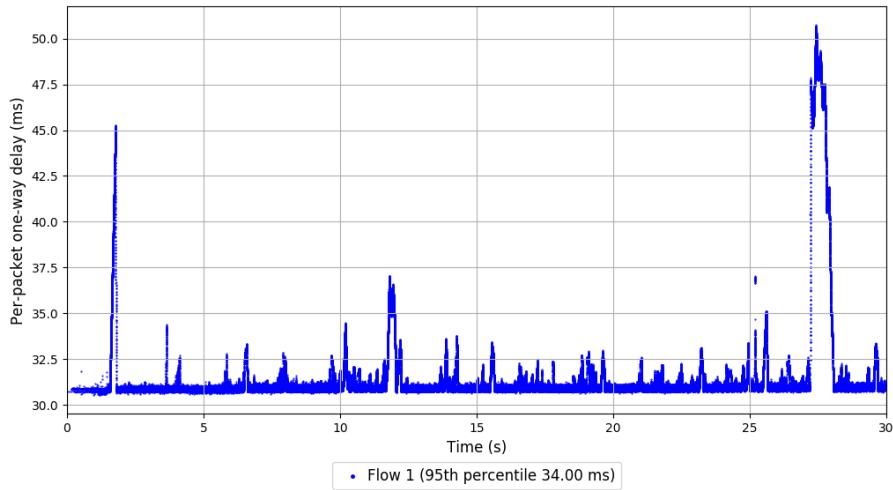
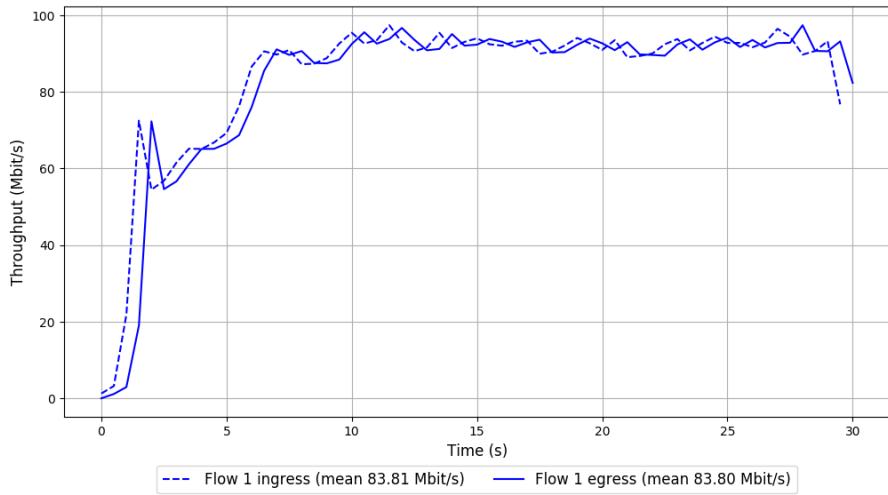


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-11-15 02:46:03
End at: 2018-11-15 02:46:33
Local clock offset: 3.992 ms
Remote clock offset: -3.441 ms

# Below is generated by plot.py at 2018-11-15 04:08:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.80 Mbit/s
95th percentile per-packet one-way delay: 34.001 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 83.80 Mbit/s
95th percentile per-packet one-way delay: 34.001 ms
Loss rate: 0.01%
```

Run 2: Report of PCC-Vivace — Data Link

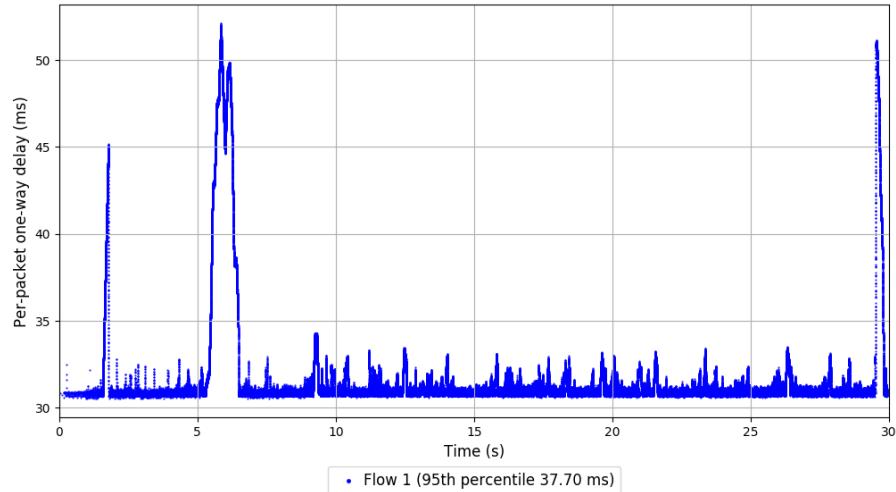
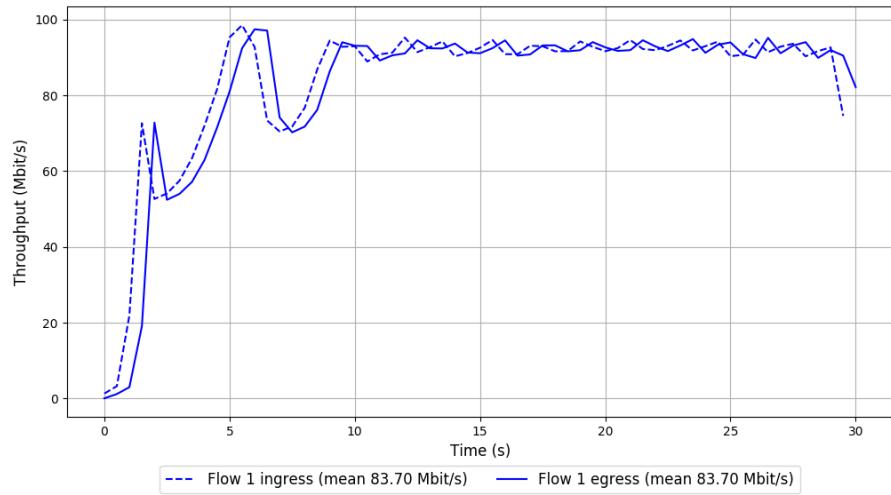


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-11-15 03:10:24
End at: 2018-11-15 03:10:54
Local clock offset: 2.582 ms
Remote clock offset: -2.833 ms

# Below is generated by plot.py at 2018-11-15 04:08:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.70 Mbit/s
95th percentile per-packet one-way delay: 37.699 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 83.70 Mbit/s
95th percentile per-packet one-way delay: 37.699 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Vivace — Data Link

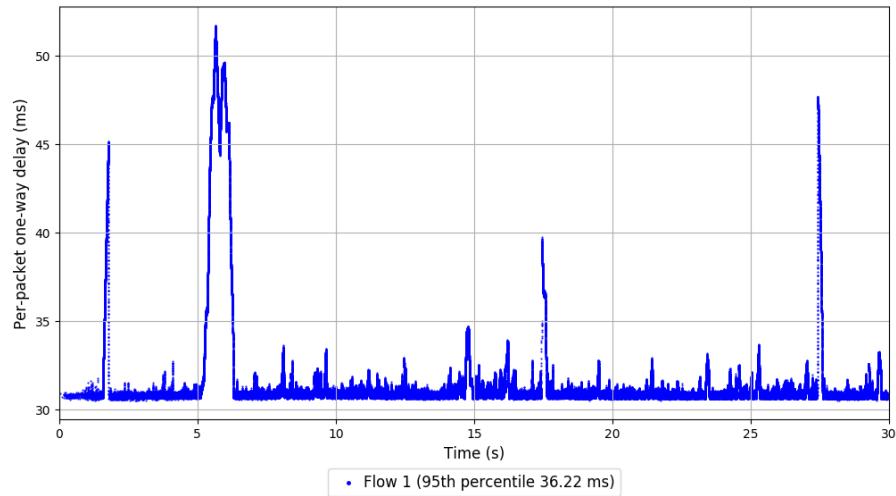
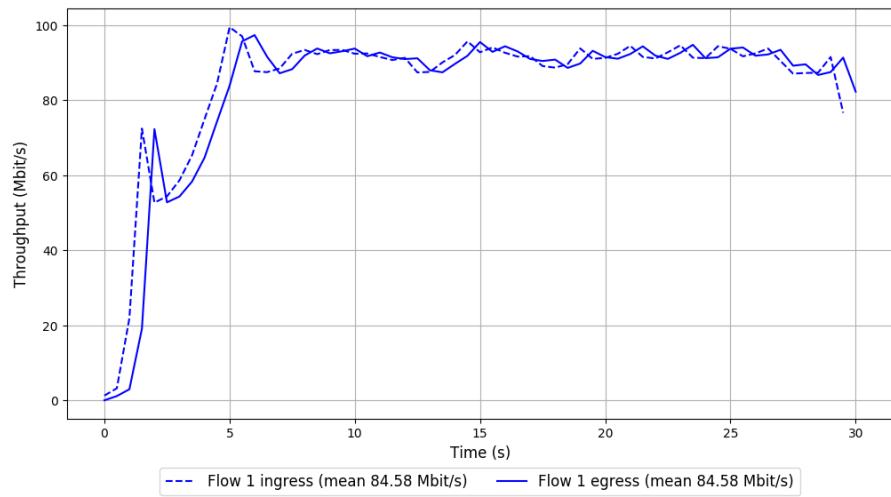


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-11-15 03:34:16
End at: 2018-11-15 03:34:46
Local clock offset: 1.72 ms
Remote clock offset: -2.594 ms

# Below is generated by plot.py at 2018-11-15 04:08:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.58 Mbit/s
95th percentile per-packet one-way delay: 36.219 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 84.58 Mbit/s
95th percentile per-packet one-way delay: 36.219 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

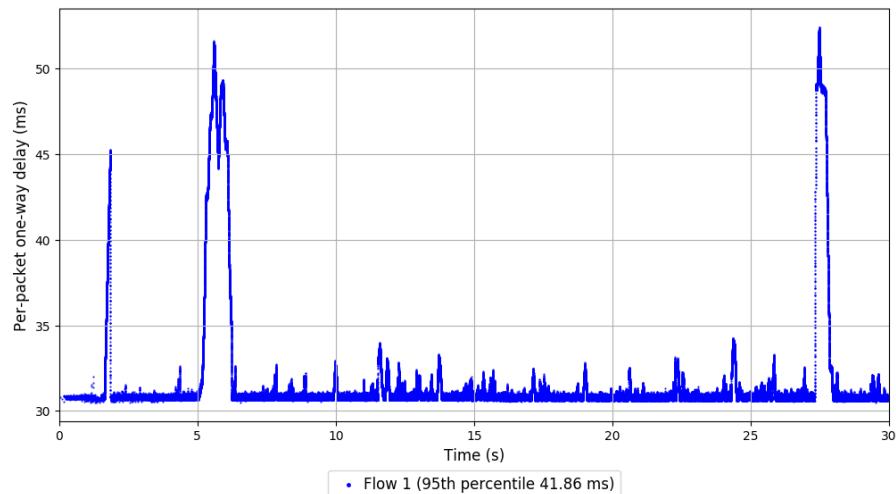
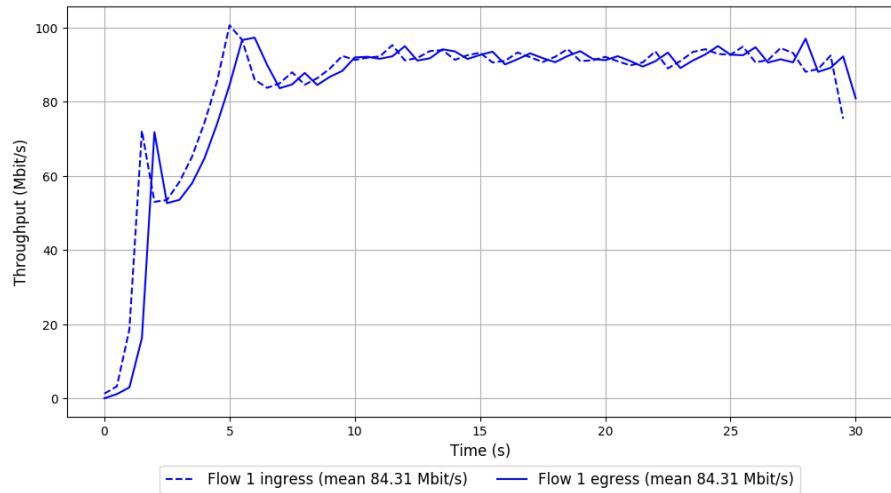


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-11-15 03:57:52
End at: 2018-11-15 03:58:22
Local clock offset: 1.628 ms
Remote clock offset: -1.429 ms

# Below is generated by plot.py at 2018-11-15 04:08:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.31 Mbit/s
95th percentile per-packet one-way delay: 41.861 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 84.31 Mbit/s
95th percentile per-packet one-way delay: 41.861 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link

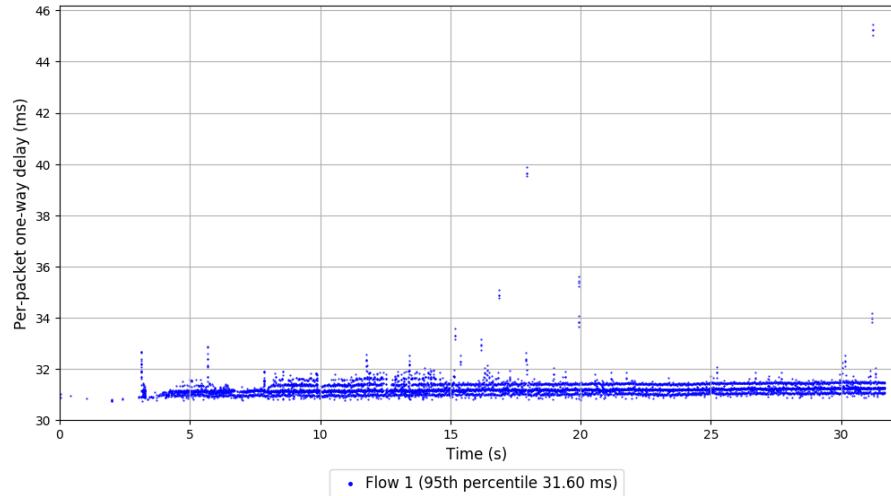
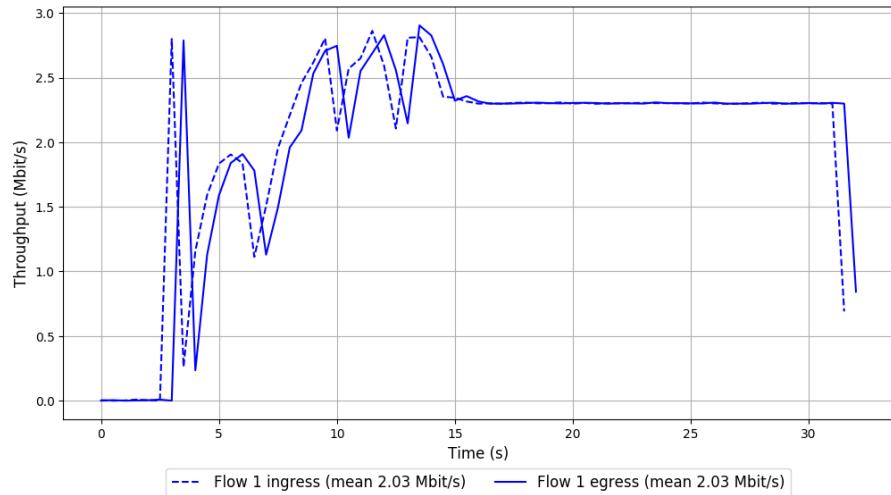


```
Run 1: Statistics of WebRTC media

Start at: 2018-11-15 02:01:55
End at: 2018-11-15 02:02:25
Local clock offset: 1.05 ms
Remote clock offset: -4.04 ms

# Below is generated by plot.py at 2018-11-15 04:08:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 31.599 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 31.599 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

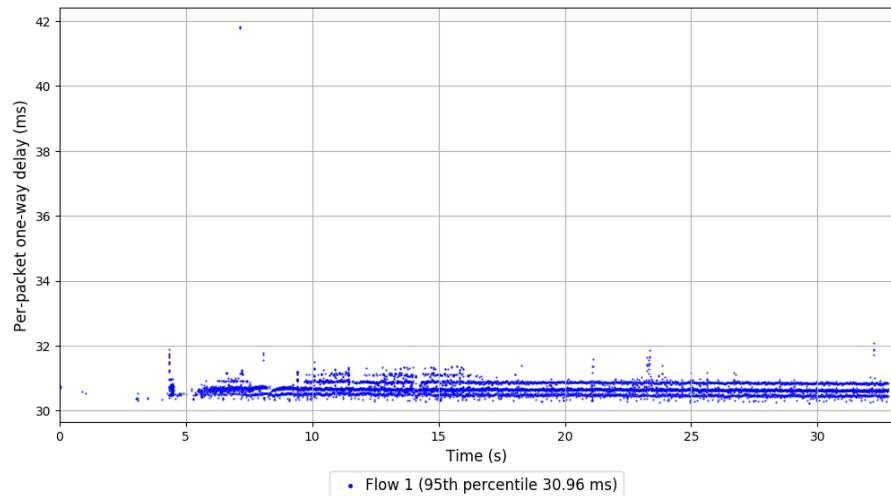
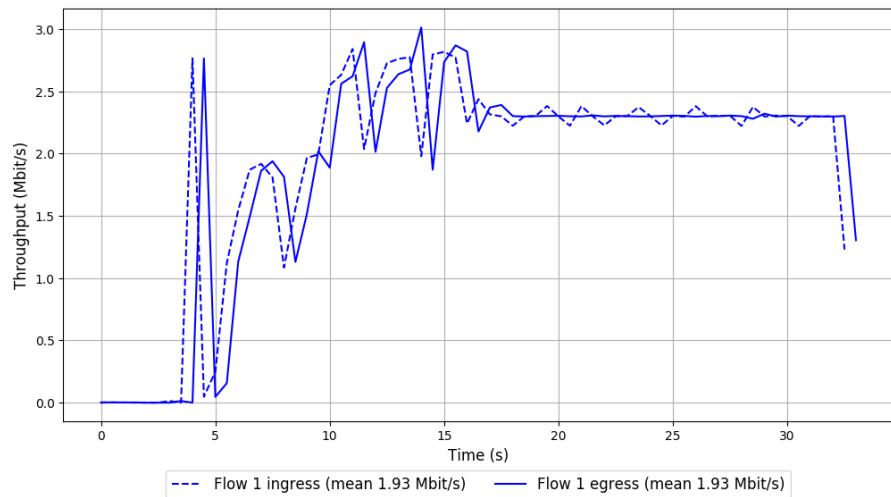


Run 2: Statistics of WebRTC media

```
Start at: 2018-11-15 02:27:21
End at: 2018-11-15 02:27:51
Local clock offset: 3.316 ms
Remote clock offset: -3.847 ms

# Below is generated by plot.py at 2018-11-15 04:08:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 30.961 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 30.961 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

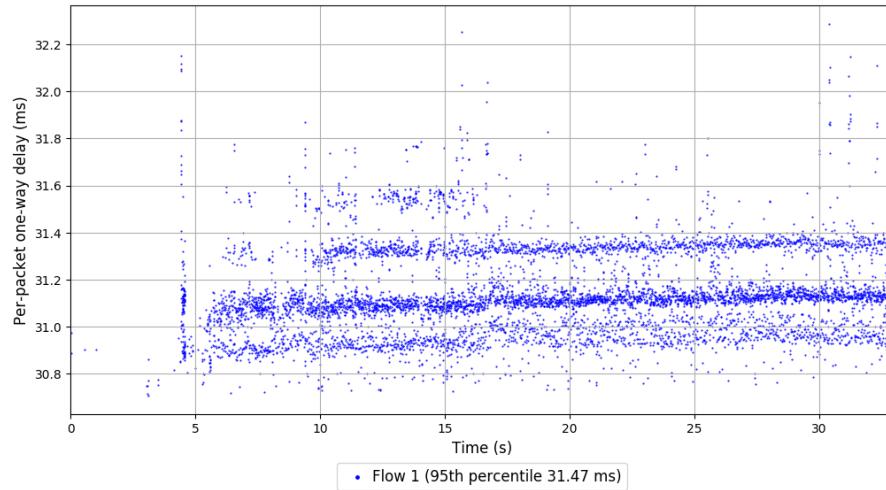
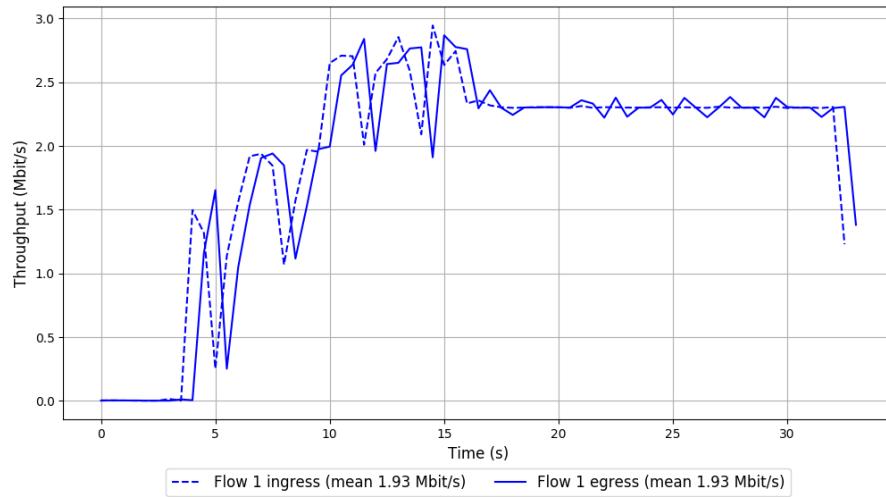


Run 3: Statistics of WebRTC media

```
Start at: 2018-11-15 02:51:26
End at: 2018-11-15 02:51:56
Local clock offset: 4.763 ms
Remote clock offset: -3.294 ms

# Below is generated by plot.py at 2018-11-15 04:08:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 31.472 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 31.472 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

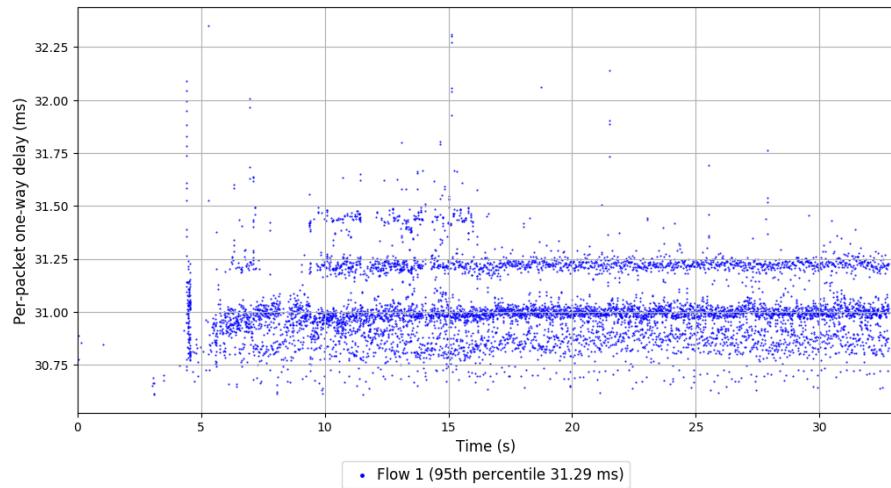
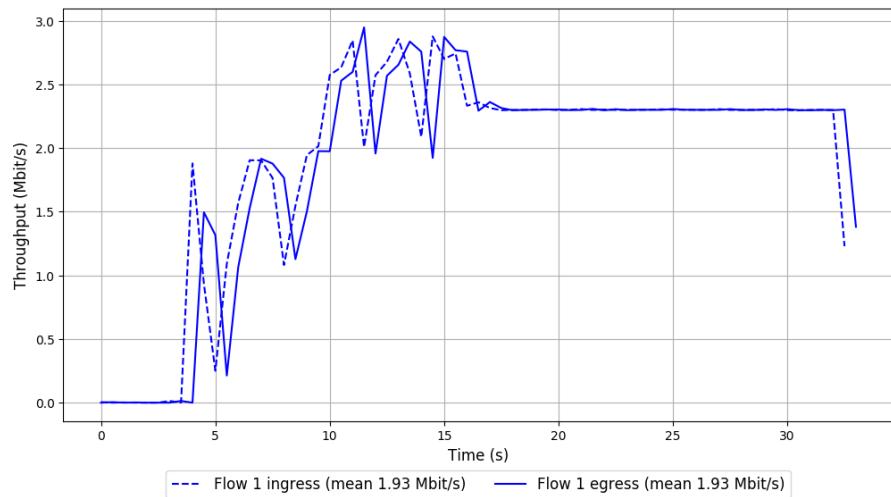


Run 4: Statistics of WebRTC media

```
Start at: 2018-11-15 03:15:48
End at: 2018-11-15 03:16:18
Local clock offset: 2.54 ms
Remote clock offset: -2.741 ms

# Below is generated by plot.py at 2018-11-15 04:08:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 31.289 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 31.289 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



```
Run 5: Statistics of WebRTC media

Start at: 2018-11-15 03:39:33
End at: 2018-11-15 03:40:03
Local clock offset: 1.362 ms
Remote clock offset: -2.446 ms

# Below is generated by plot.py at 2018-11-15 04:08:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 31.262 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 31.262 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link

