

## Pantheon Report

Generated at 2018-09-06 16:07:00 (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.

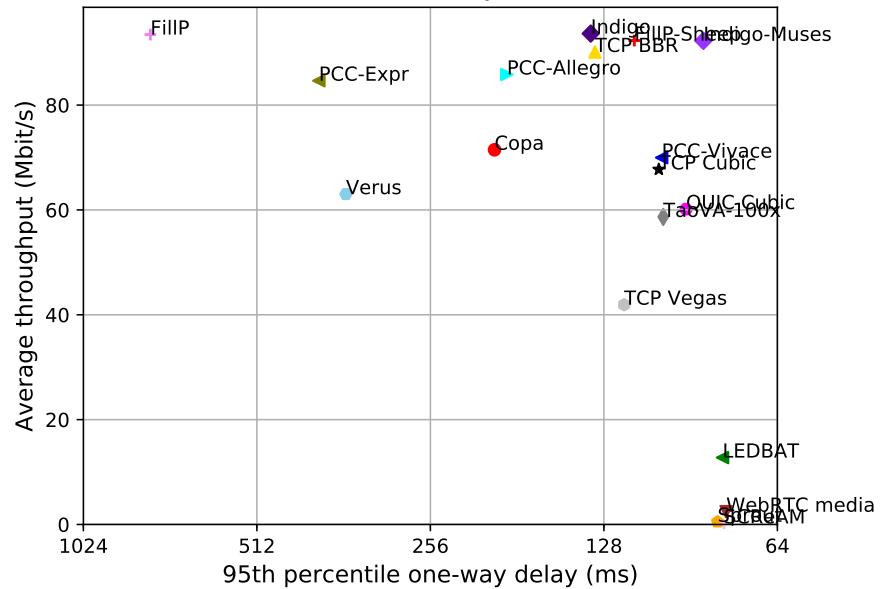
System info:

```
Linux 4.15.0-1020-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
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

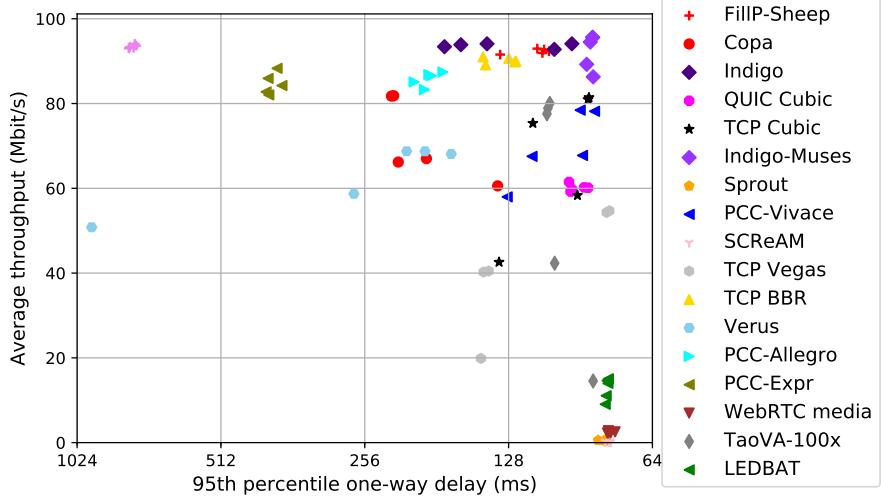
Git summary:

```
branch: muses @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ a28d20fb82a95a965a3da65fd1eb71b8994e9b84
third_party/pantheon-tunnel @ cbfce6db5ff5740dafe1771f813cd646339e1952
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
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  FillP



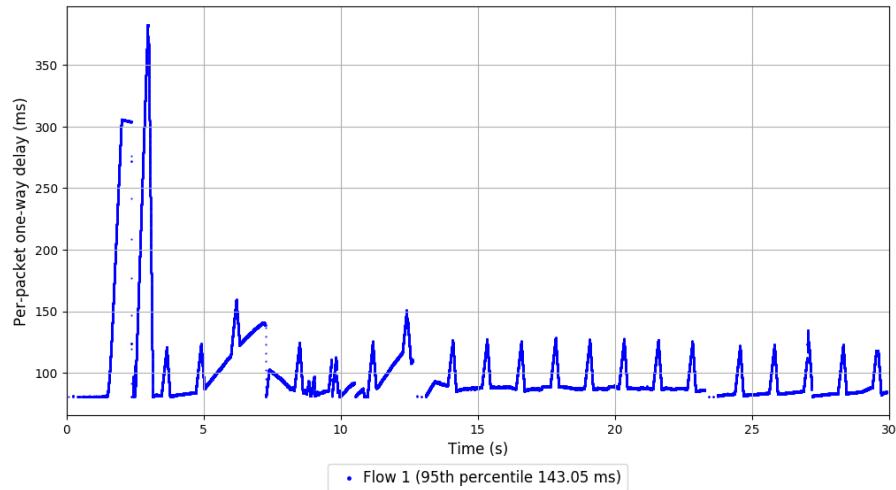
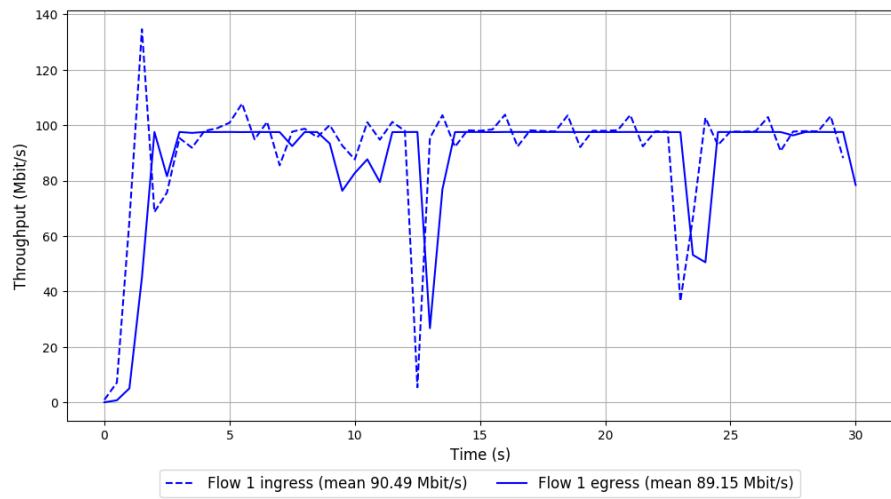
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	90.13	132.67	1.13
Copa	5	71.48	198.14	0.78
TCP Cubic	5	67.73	102.78	0.77
FillP	5	93.45	783.59	4.35
FillP-Sheep	5	92.30	113.34	1.89
Indigo	5	93.65	134.90	1.48
LEDBAT	5	12.76	79.69	0.79
Indigo-Muses	5	92.25	86.02	0.93
PCC-Allegro	5	85.84	188.58	1.10
PCC-Expr	5	84.65	399.76	1.58
QUIC Cubic	5	60.16	92.20	0.81
SCReAM	5	0.20	79.24	0.52
Sprout	3	0.51	81.30	0.42
TaoVA-100x	5	58.67	100.98	0.84
TCP Vegas	5	41.92	118.04	0.59
Verus	5	63.02	358.74	0.89
PCC-Vivace	5	69.98	101.63	1.08
WebRTC media	5	2.43	78.55	0.50

Run 1: Statistics of TCP BBR

```
Start at: 2018-09-06 14:22:30
End at: 2018-09-06 14:23:00
Local clock offset: 4.844 ms
Remote clock offset: 0.712 ms

# Below is generated by plot.py at 2018-09-06 15:57:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.15 Mbit/s
95th percentile per-packet one-way delay: 143.049 ms
Loss rate: 2.01%
-- Flow 1:
Average throughput: 89.15 Mbit/s
95th percentile per-packet one-way delay: 143.049 ms
Loss rate: 2.01%
```

## Run 1: Report of TCP BBR — Data Link

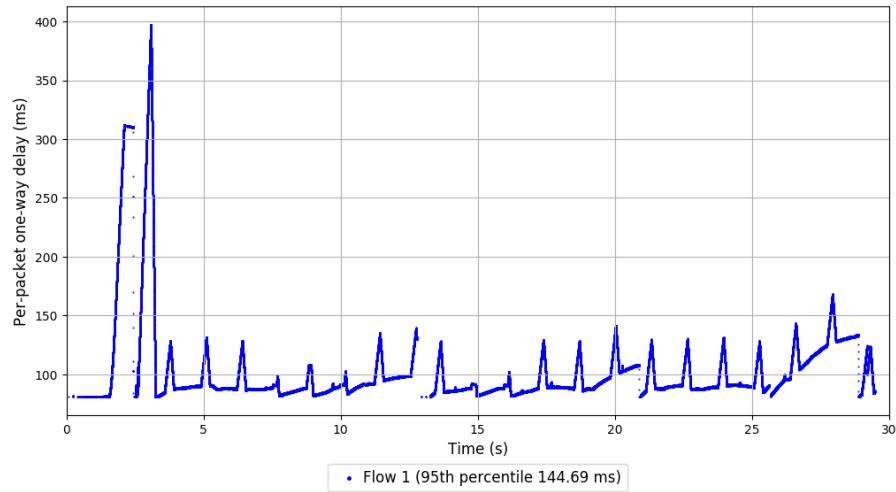
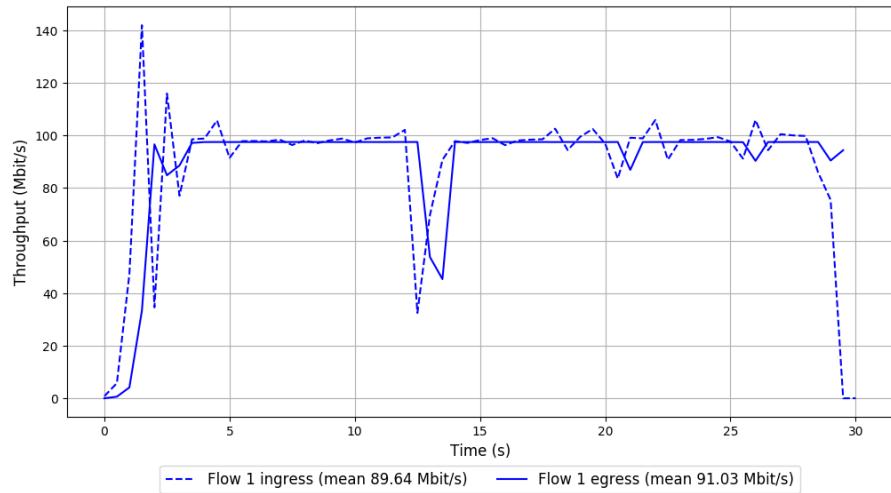


Run 2: Statistics of TCP BBR

```
Start at: 2018-09-06 14:43:53
End at: 2018-09-06 14:44:23
Local clock offset: 4.38 ms
Remote clock offset: 1.39 ms

# Below is generated by plot.py at 2018-09-06 15:57:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.03 Mbit/s
95th percentile per-packet one-way delay: 144.692 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 91.03 Mbit/s
95th percentile per-packet one-way delay: 144.692 ms
Loss rate: 0.73%
```

## Run 2: Report of TCP BBR — Data Link

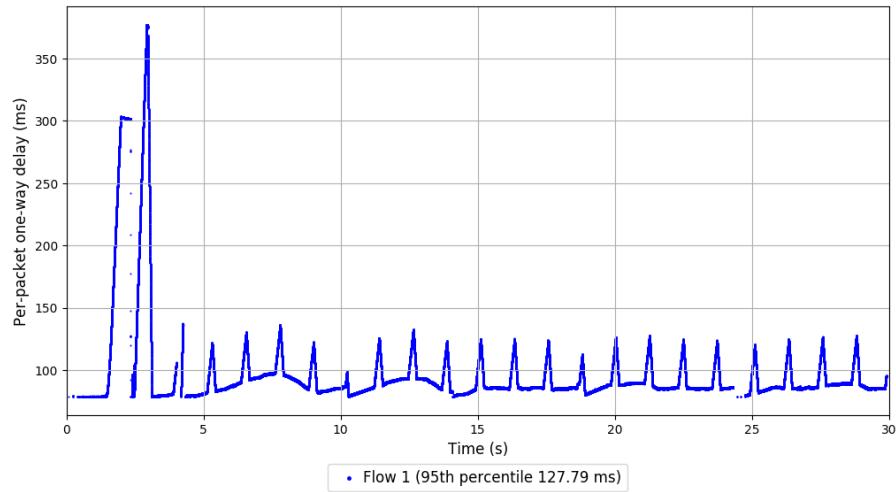
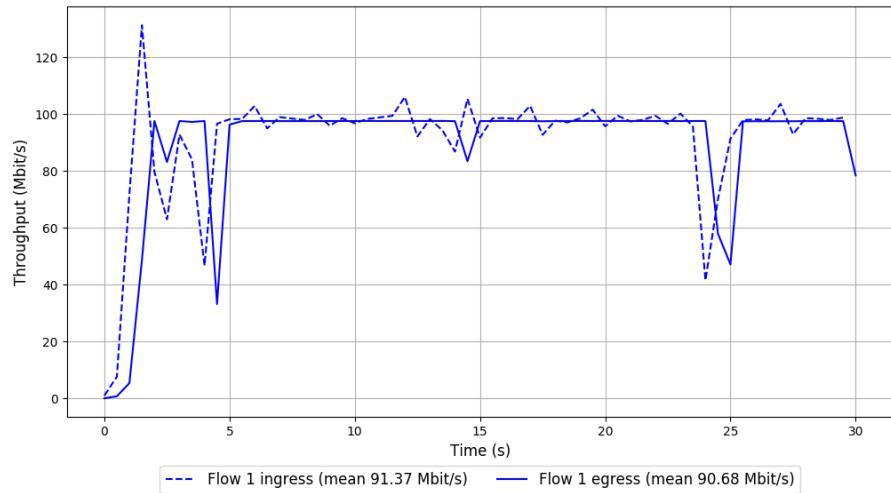


Run 3: Statistics of TCP BBR

```
Start at: 2018-09-06 15:05:05
End at: 2018-09-06 15:05:35
Local clock offset: 3.798 ms
Remote clock offset: 0.577 ms

# Below is generated by plot.py at 2018-09-06 15:58:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.68 Mbit/s
95th percentile per-packet one-way delay: 127.794 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 90.68 Mbit/s
95th percentile per-packet one-way delay: 127.794 ms
Loss rate: 1.27%
```

### Run 3: Report of TCP BBR — Data Link

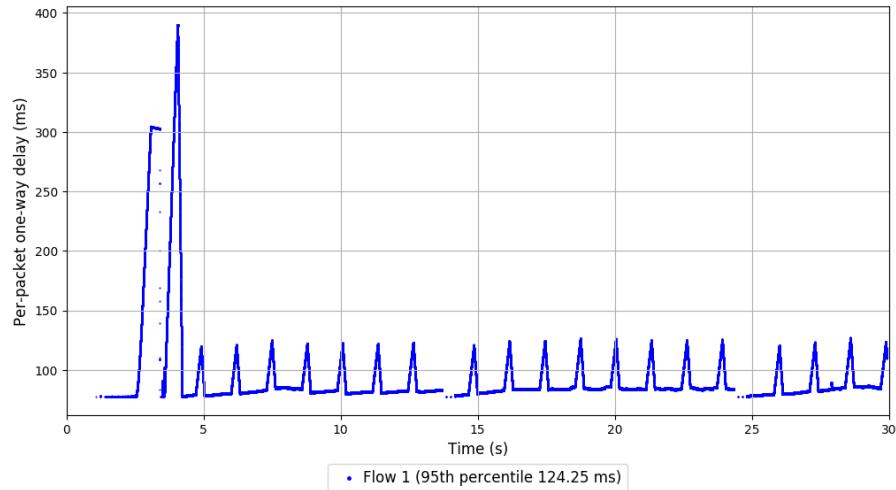
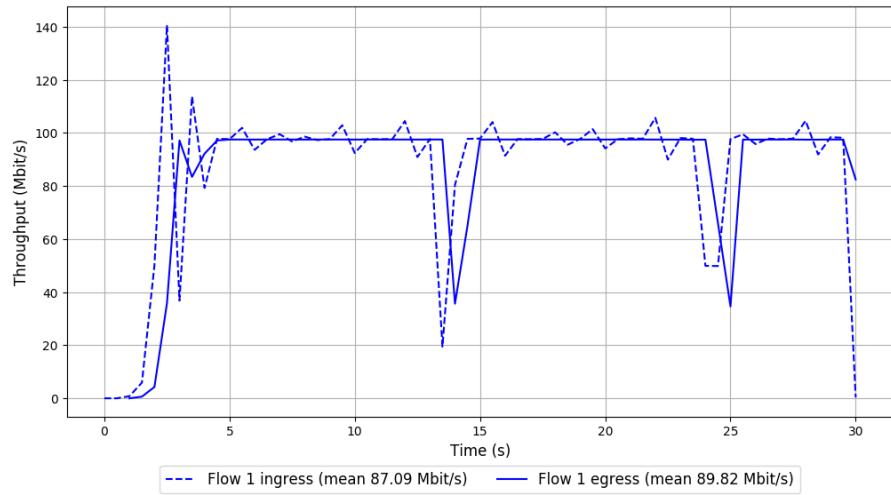


Run 4: Statistics of TCP BBR

```
Start at: 2018-09-06 15:26:47
End at: 2018-09-06 15:27:17
Local clock offset: 4.537 ms
Remote clock offset: 3.17 ms

# Below is generated by plot.py at 2018-09-06 15:58:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.82 Mbit/s
95th percentile per-packet one-way delay: 124.246 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 89.82 Mbit/s
95th percentile per-packet one-way delay: 124.246 ms
Loss rate: 0.86%
```

### Run 4: Report of TCP BBR — Data Link

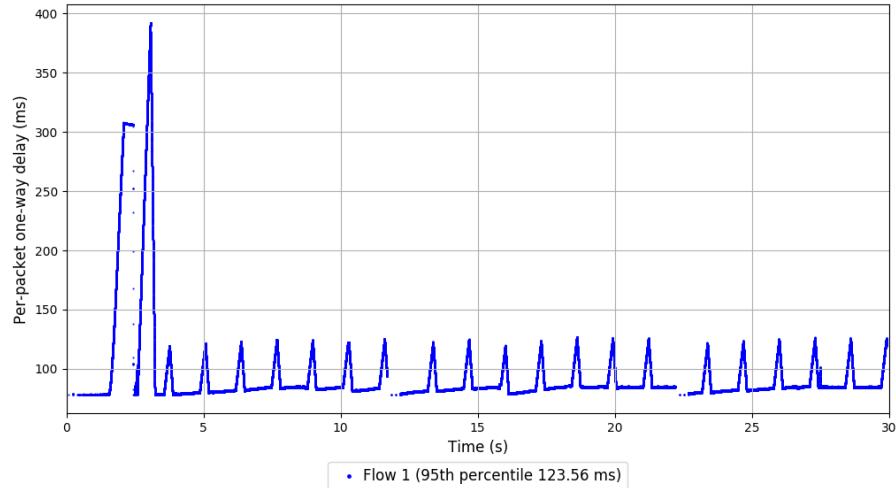
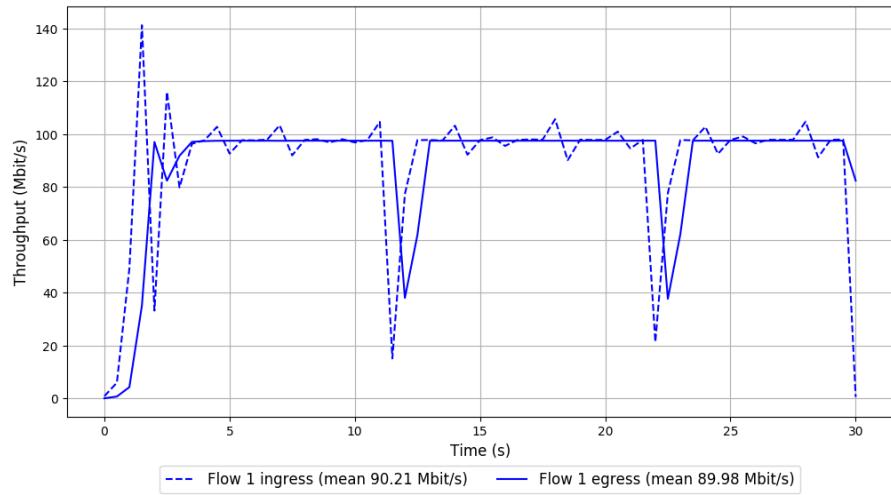


Run 5: Statistics of TCP BBR

```
Start at: 2018-09-06 15:48:03
End at: 2018-09-06 15:48:33
Local clock offset: 4.42 ms
Remote clock offset: 3.422 ms

# Below is generated by plot.py at 2018-09-06 15:58:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.98 Mbit/s
95th percentile per-packet one-way delay: 123.561 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 89.98 Mbit/s
95th percentile per-packet one-way delay: 123.561 ms
Loss rate: 0.77%
```

### Run 5: Report of TCP BBR — Data Link

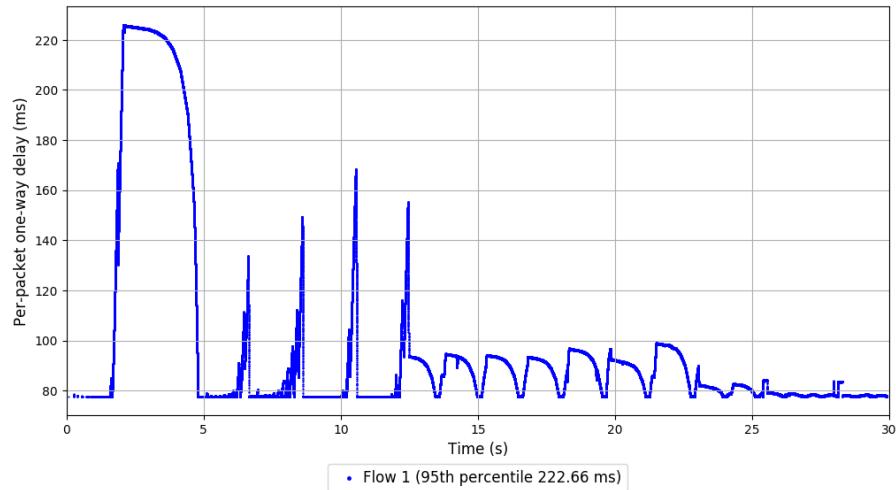
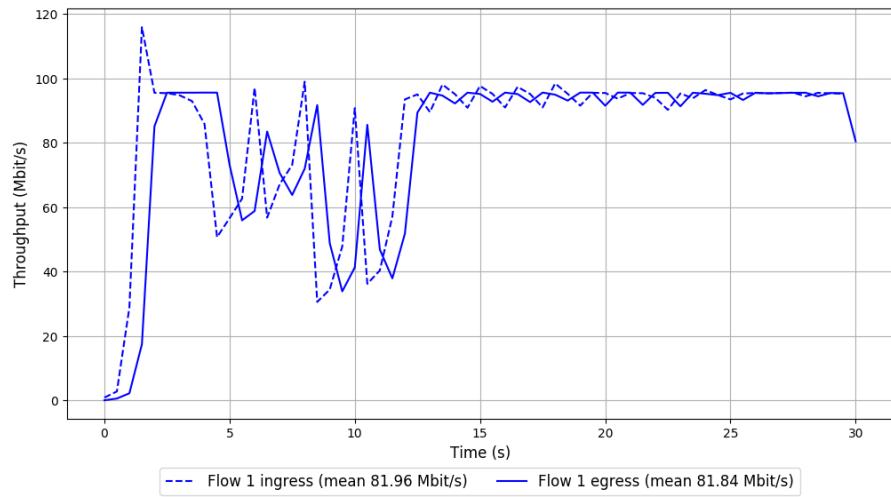


Run 1: Statistics of Copa

```
Start at: 2018-09-06 14:20:05
End at: 2018-09-06 14:20:36
Local clock offset: 4.162 ms
Remote clock offset: 0.747 ms

# Below is generated by plot.py at 2018-09-06 15:58:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.84 Mbit/s
95th percentile per-packet one-way delay: 222.663 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 81.84 Mbit/s
95th percentile per-packet one-way delay: 222.663 ms
Loss rate: 0.66%
```

### Run 1: Report of Copa — Data Link

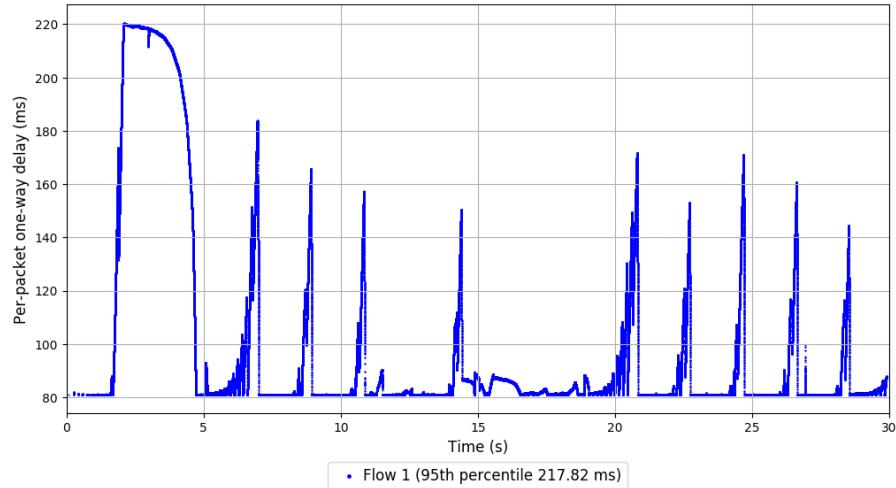
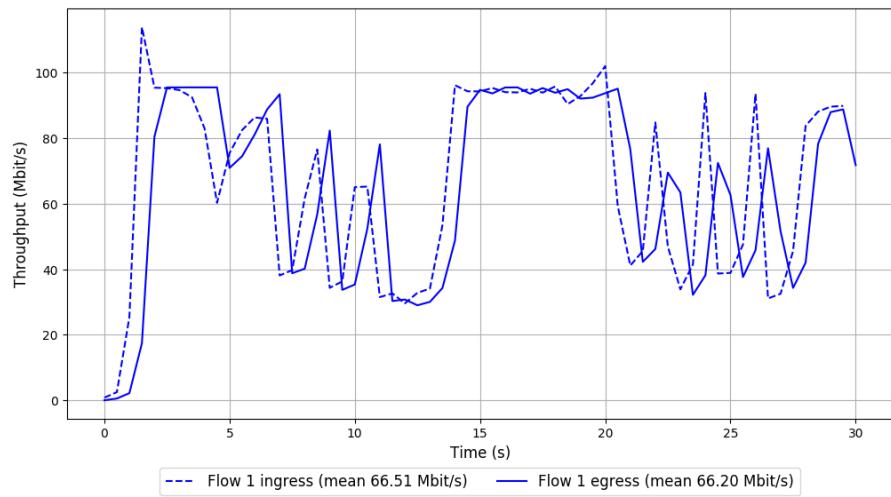


Run 2: Statistics of Copa

```
Start at: 2018-09-06 14:41:29
End at: 2018-09-06 14:41:59
Local clock offset: 4.333 ms
Remote clock offset: 1.216 ms

# Below is generated by plot.py at 2018-09-06 15:58:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.20 Mbit/s
95th percentile per-packet one-way delay: 217.817 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 66.20 Mbit/s
95th percentile per-packet one-way delay: 217.817 ms
Loss rate: 0.99%
```

## Run 2: Report of Copa — Data Link

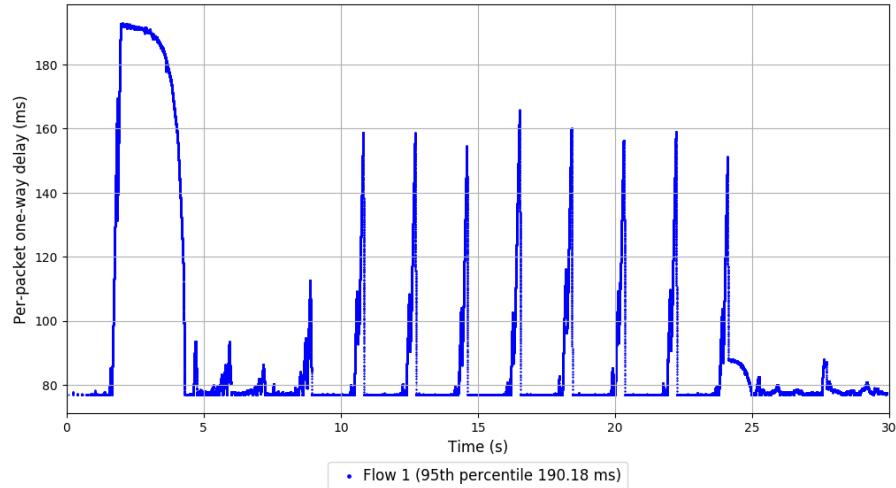
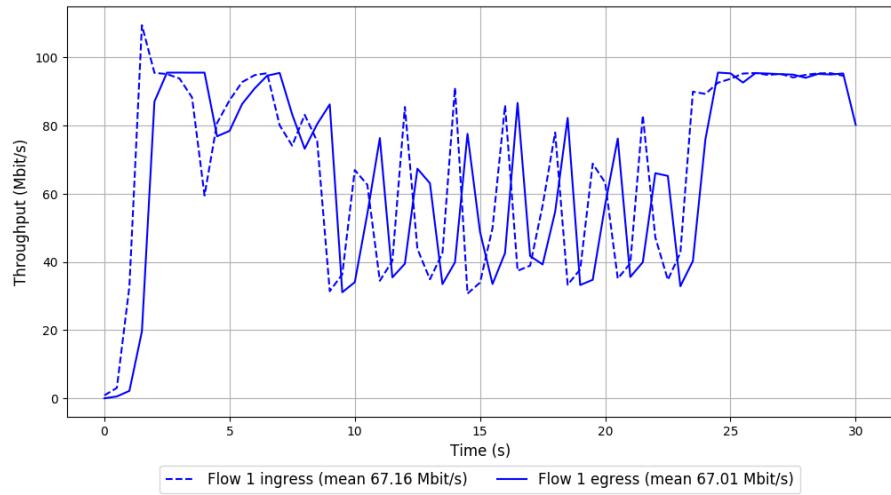


Run 3: Statistics of Copa

```
Start at: 2018-09-06 15:02:42
End at: 2018-09-06 15:03:12
Local clock offset: 3.847 ms
Remote clock offset: 2.5 ms

# Below is generated by plot.py at 2018-09-06 15:58:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.01 Mbit/s
95th percentile per-packet one-way delay: 190.182 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 67.01 Mbit/s
95th percentile per-packet one-way delay: 190.182 ms
Loss rate: 0.75%
```

### Run 3: Report of Copa — Data Link

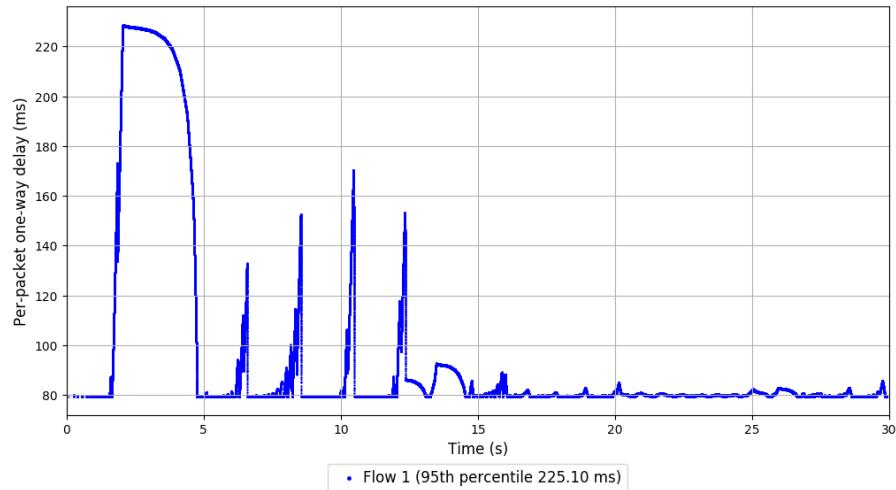
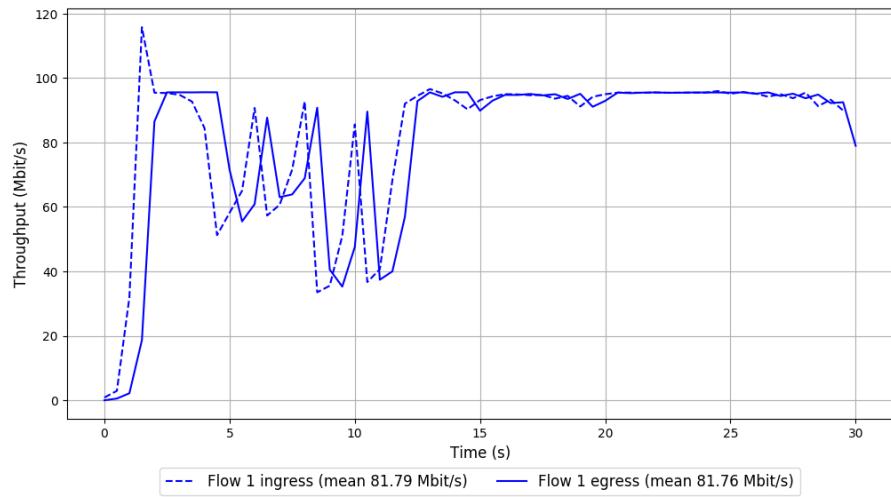


Run 4: Statistics of Copa

```
Start at: 2018-09-06 15:24:05
End at: 2018-09-06 15:24:35
Local clock offset: 3.783 ms
Remote clock offset: 0.745 ms

# Below is generated by plot.py at 2018-09-06 15:59:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.76 Mbit/s
95th percentile per-packet one-way delay: 225.105 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 81.76 Mbit/s
95th percentile per-packet one-way delay: 225.105 ms
Loss rate: 0.55%
```

## Run 4: Report of Copa — Data Link

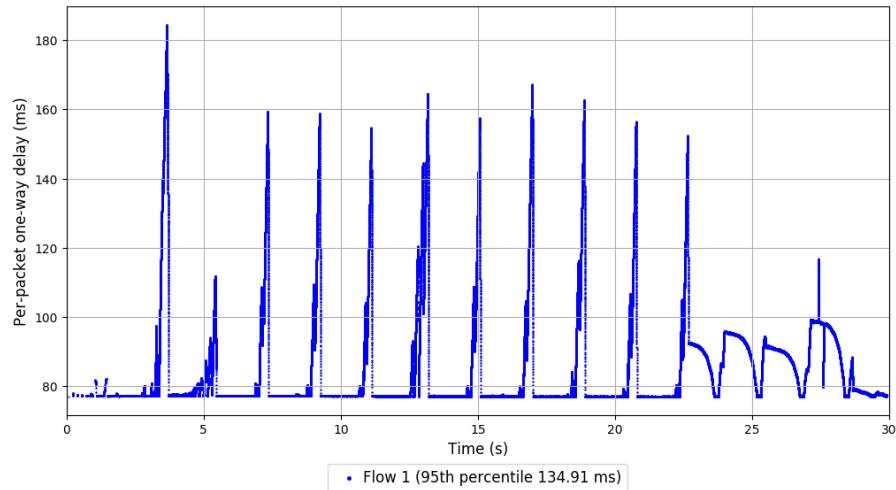
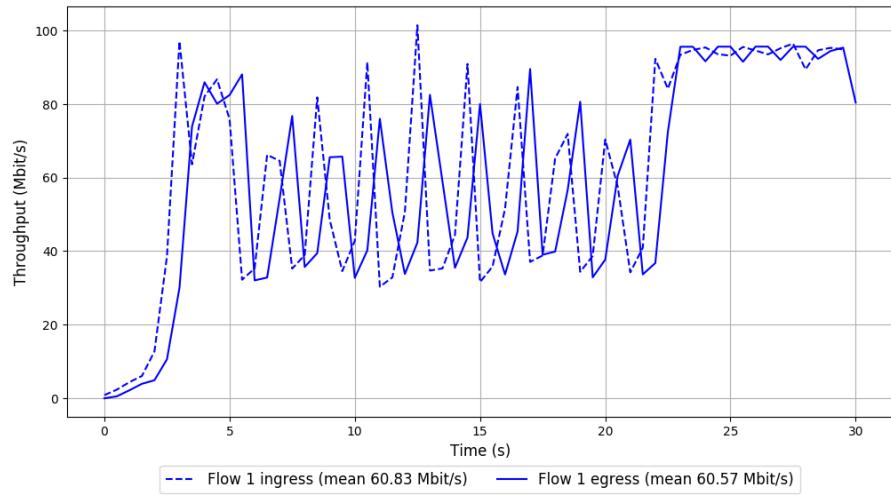


Run 5: Statistics of Copa

```
Start at: 2018-09-06 15:45:39
End at: 2018-09-06 15:46:09
Local clock offset: 3.751 ms
Remote clock offset: 2.088 ms

# Below is generated by plot.py at 2018-09-06 15:59:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.57 Mbit/s
95th percentile per-packet one-way delay: 134.913 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 60.57 Mbit/s
95th percentile per-packet one-way delay: 134.913 ms
Loss rate: 0.93%
```

### Run 5: Report of Copa — Data Link

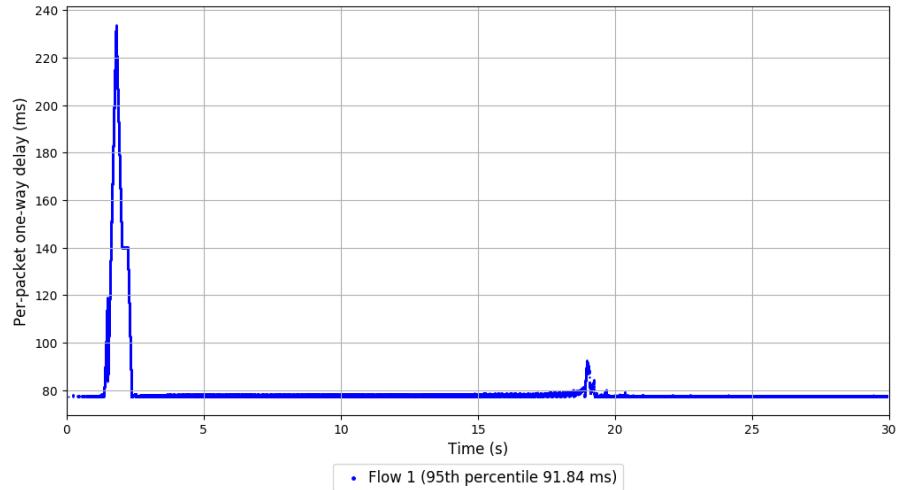
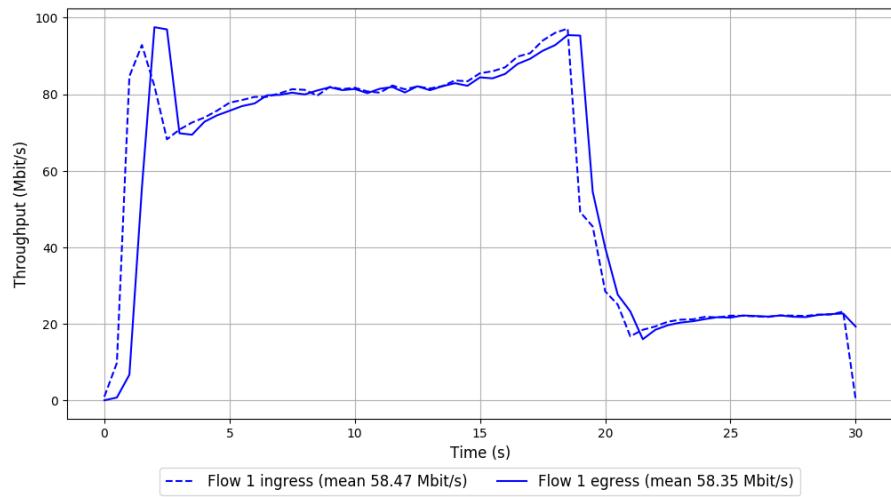


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-09-06 14:21:20
End at: 2018-09-06 14:21:50
Local clock offset: 4.142 ms
Remote clock offset: 0.801 ms

# Below is generated by plot.py at 2018-09-06 15:59:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.35 Mbit/s
95th percentile per-packet one-way delay: 91.845 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 58.35 Mbit/s
95th percentile per-packet one-way delay: 91.845 ms
Loss rate: 0.73%
```

### Run 1: Report of TCP Cubic — Data Link

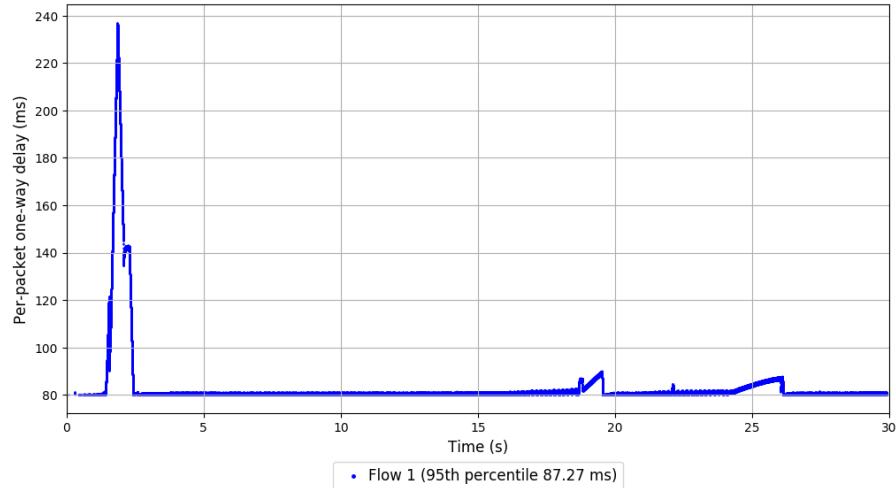
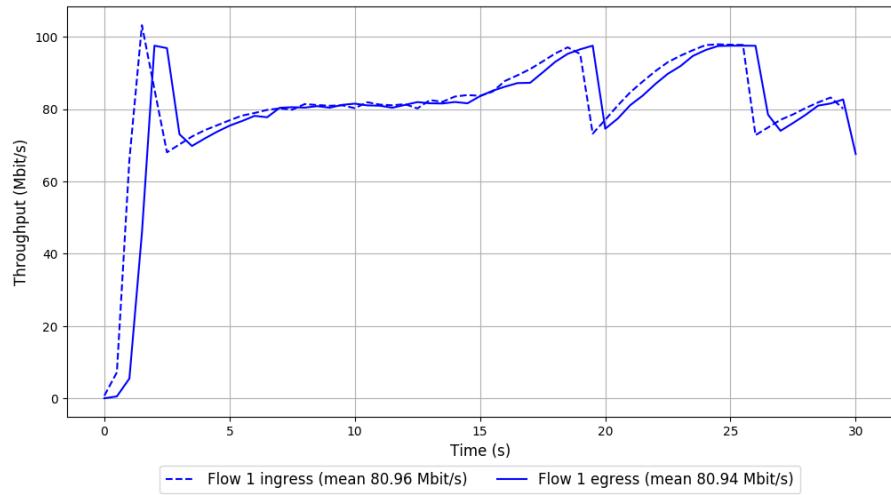


Run 2: Statistics of TCP Cubic

```
Start at: 2018-09-06 14:42:42
End at: 2018-09-06 14:43:12
Local clock offset: 4.38 ms
Remote clock offset: 2.268 ms

# Below is generated by plot.py at 2018-09-06 15:59:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.94 Mbit/s
95th percentile per-packet one-way delay: 87.270 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 80.94 Mbit/s
95th percentile per-packet one-way delay: 87.270 ms
Loss rate: 0.55%
```

## Run 2: Report of TCP Cubic — Data Link

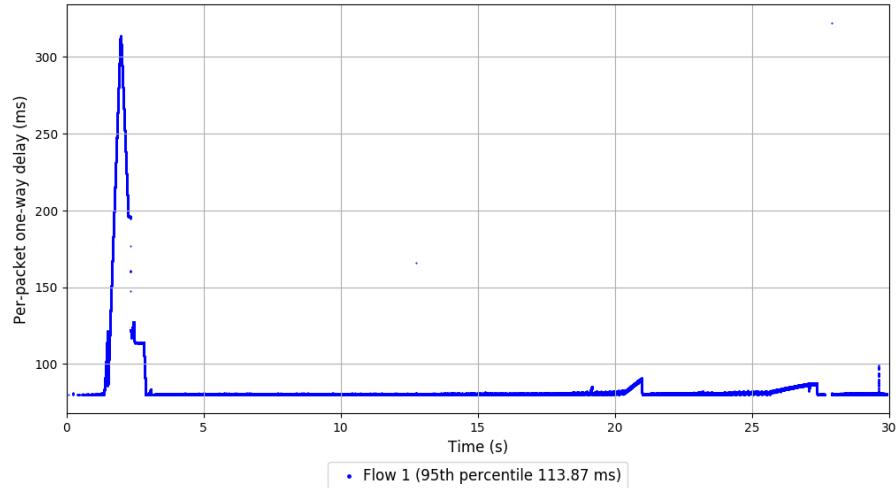
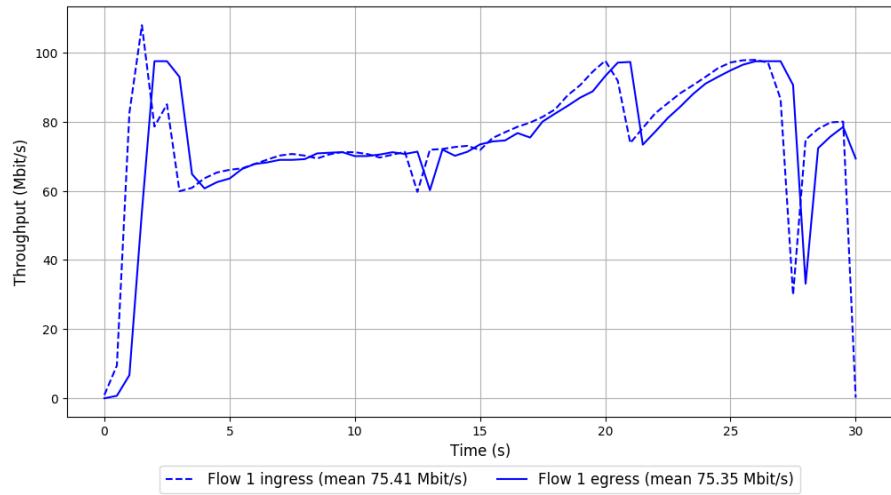


```
Run 3: Statistics of TCP Cubic
```

```
Start at: 2018-09-06 15:03:54
End at: 2018-09-06 15:04:25
Local clock offset: 4.635 ms
Remote clock offset: 0.323 ms

# Below is generated by plot.py at 2018-09-06 15:59:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.35 Mbit/s
95th percentile per-packet one-way delay: 113.874 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 75.35 Mbit/s
95th percentile per-packet one-way delay: 113.874 ms
Loss rate: 0.60%
```

### Run 3: Report of TCP Cubic — Data Link

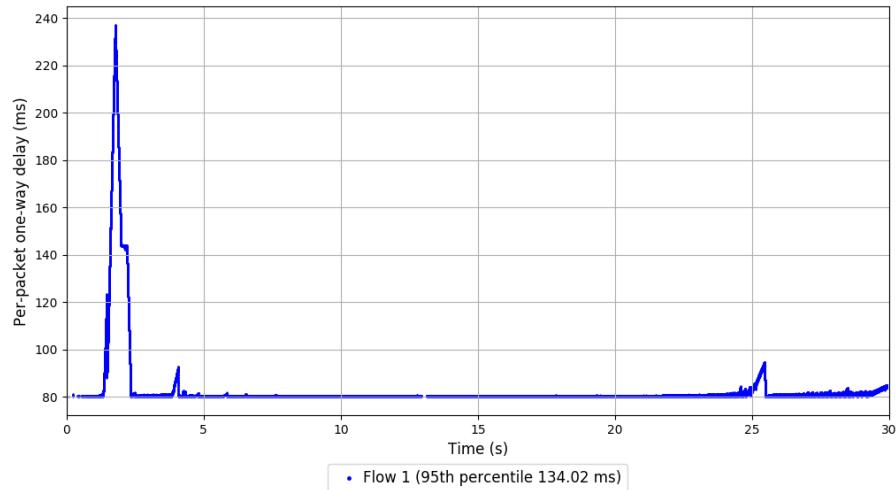
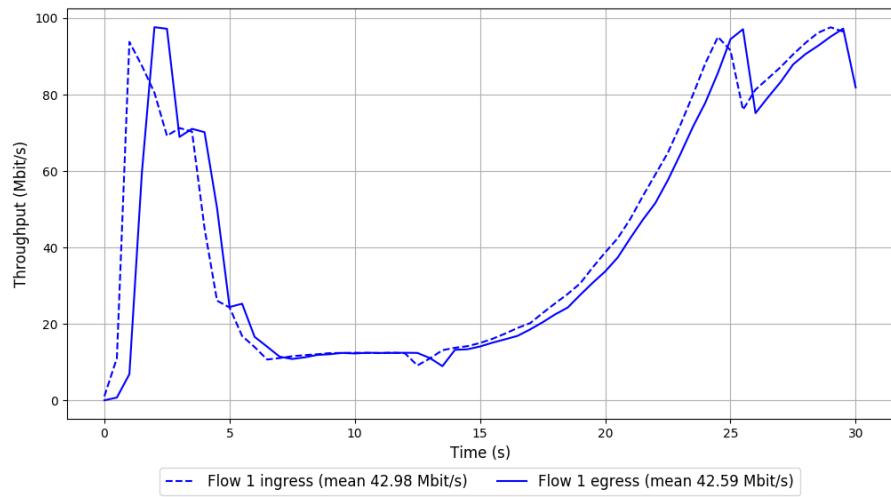


Run 4: Statistics of TCP Cubic

```
Start at: 2018-09-06 15:25:37
End at: 2018-09-06 15:26:07
Local clock offset: 4.535 ms
Remote clock offset: 0.723 ms

# Below is generated by plot.py at 2018-09-06 15:59:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.59 Mbit/s
95th percentile per-packet one-way delay: 134.023 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 42.59 Mbit/s
95th percentile per-packet one-way delay: 134.023 ms
Loss rate: 1.42%
```

## Run 4: Report of TCP Cubic — Data Link

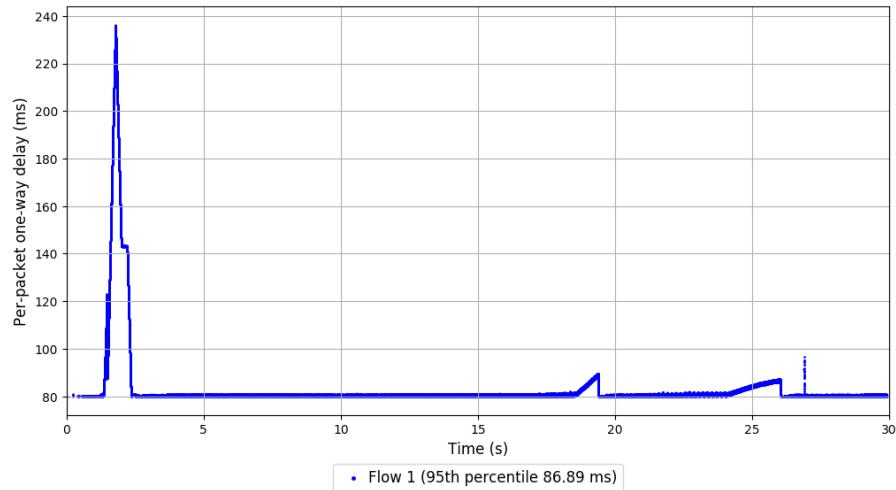
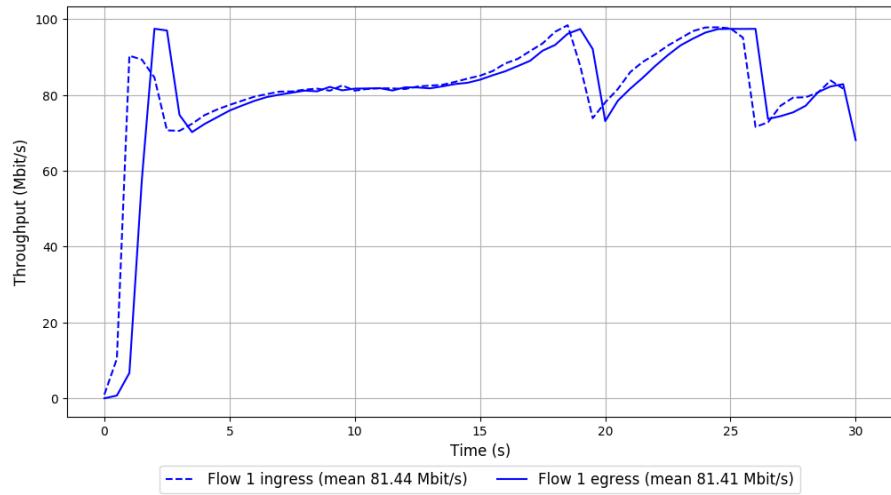


Run 5: Statistics of TCP Cubic

```
Start at: 2018-09-06 15:46:52
End at: 2018-09-06 15:47:22
Local clock offset: 4.875 ms
Remote clock offset: 1.013 ms

# Below is generated by plot.py at 2018-09-06 15:59:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.41 Mbit/s
95th percentile per-packet one-way delay: 86.889 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 81.41 Mbit/s
95th percentile per-packet one-way delay: 86.889 ms
Loss rate: 0.55%
```

### Run 5: Report of TCP Cubic — Data Link

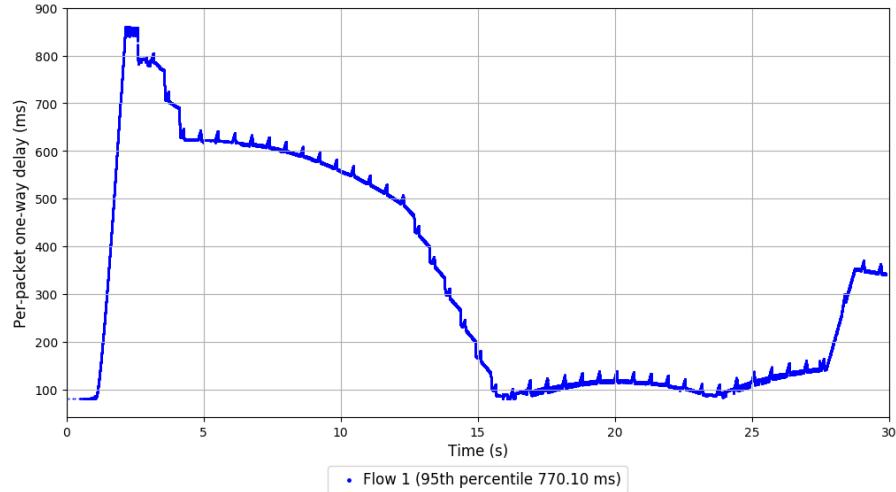
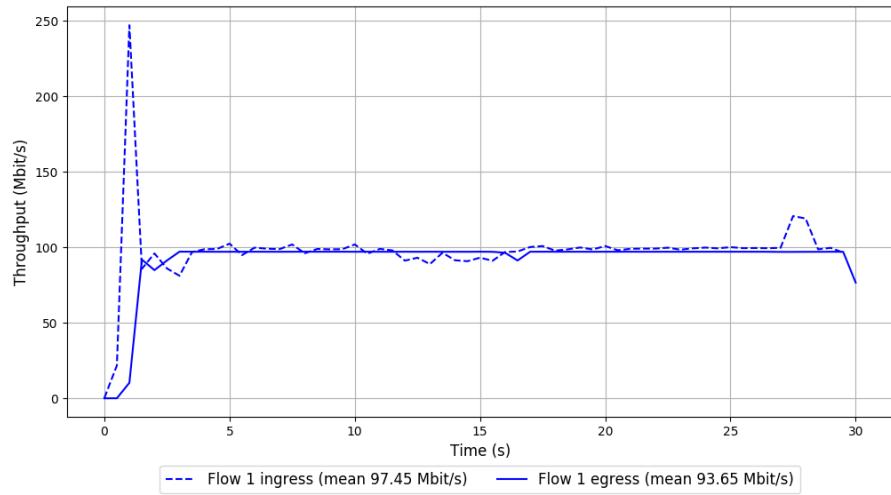


```
Run 1: Statistics of FillP

Start at: 2018-09-06 14:17:43
End at: 2018-09-06 14:18:13
Local clock offset: 4.426 ms
Remote clock offset: 0.603 ms

# Below is generated by plot.py at 2018-09-06 16:00:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.65 Mbit/s
95th percentile per-packet one-way delay: 770.097 ms
Loss rate: 4.41%
-- Flow 1:
Average throughput: 93.65 Mbit/s
95th percentile per-packet one-way delay: 770.097 ms
Loss rate: 4.41%
```

### Run 1: Report of FillP — Data Link

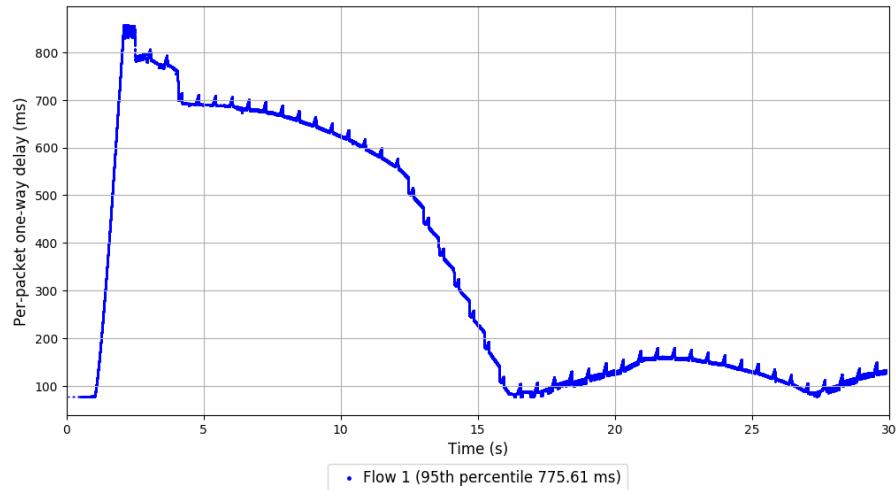
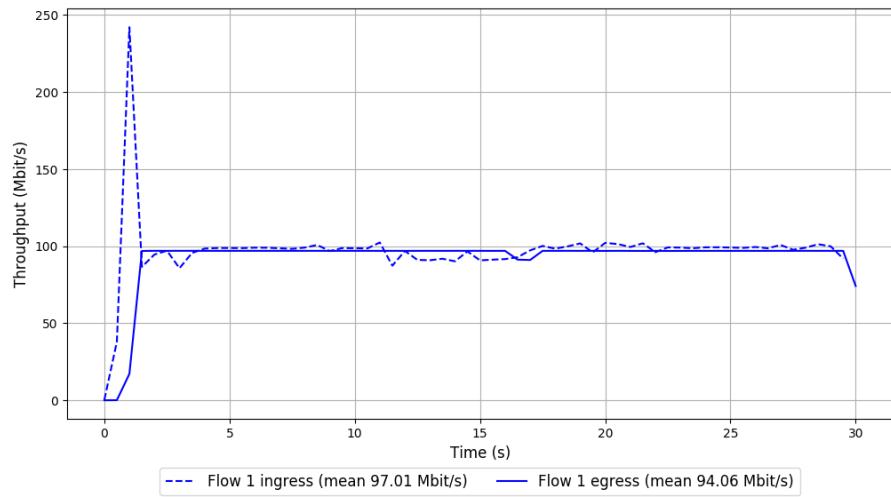


Run 2: Statistics of FillP

```
Start at: 2018-09-06 14:39:06
End at: 2018-09-06 14:39:36
Local clock offset: 3.652 ms
Remote clock offset: 1.166 ms

# Below is generated by plot.py at 2018-09-06 16:00:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.06 Mbit/s
95th percentile per-packet one-way delay: 775.610 ms
Loss rate: 3.54%
-- Flow 1:
Average throughput: 94.06 Mbit/s
95th percentile per-packet one-way delay: 775.610 ms
Loss rate: 3.54%
```

## Run 2: Report of FillP — Data Link

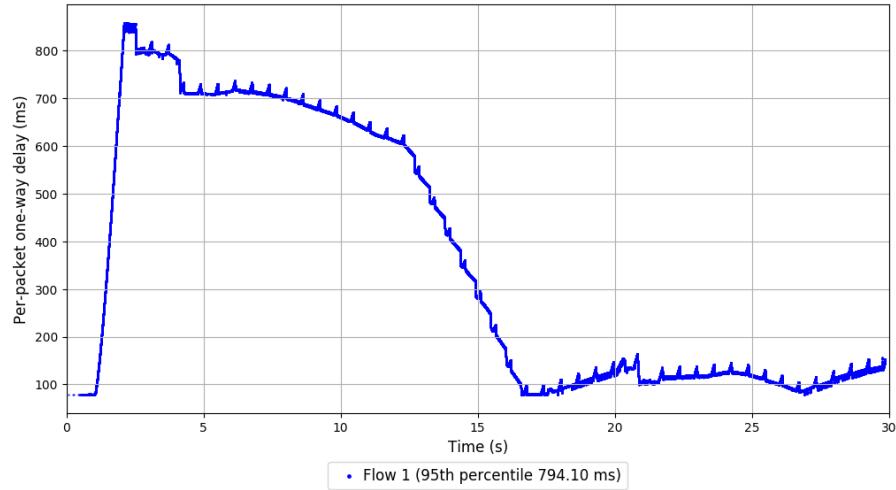
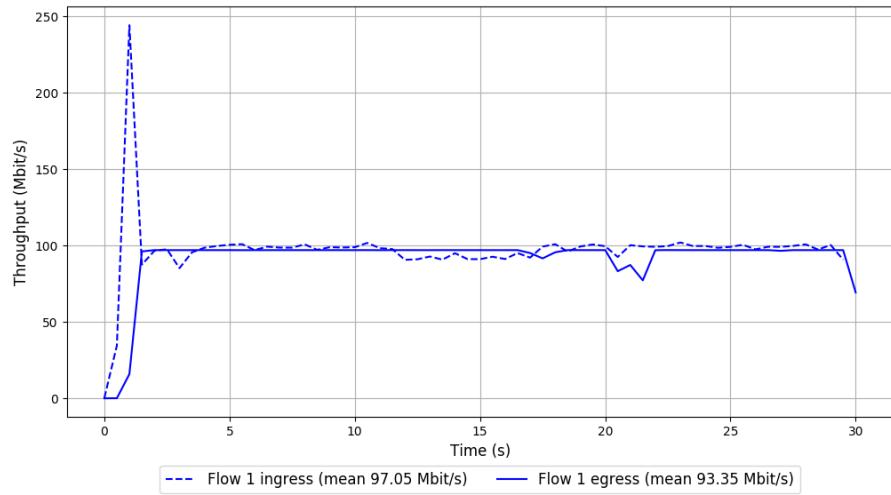


Run 3: Statistics of FillP

```
Start at: 2018-09-06 15:00:19
End at: 2018-09-06 15:00:49
Local clock offset: 4.602 ms
Remote clock offset: 1.631 ms

# Below is generated by plot.py at 2018-09-06 16:00:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.35 Mbit/s
95th percentile per-packet one-way delay: 794.099 ms
Loss rate: 4.32%
-- Flow 1:
Average throughput: 93.35 Mbit/s
95th percentile per-packet one-way delay: 794.099 ms
Loss rate: 4.32%
```

### Run 3: Report of FillP — Data Link

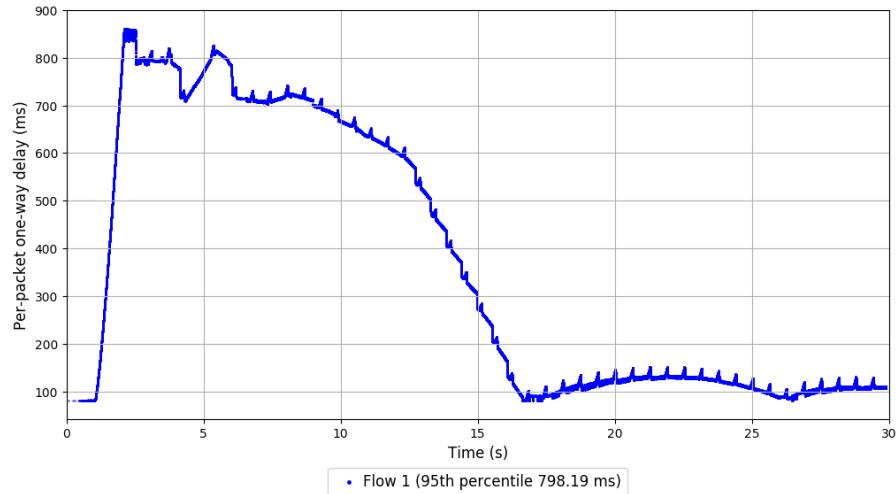
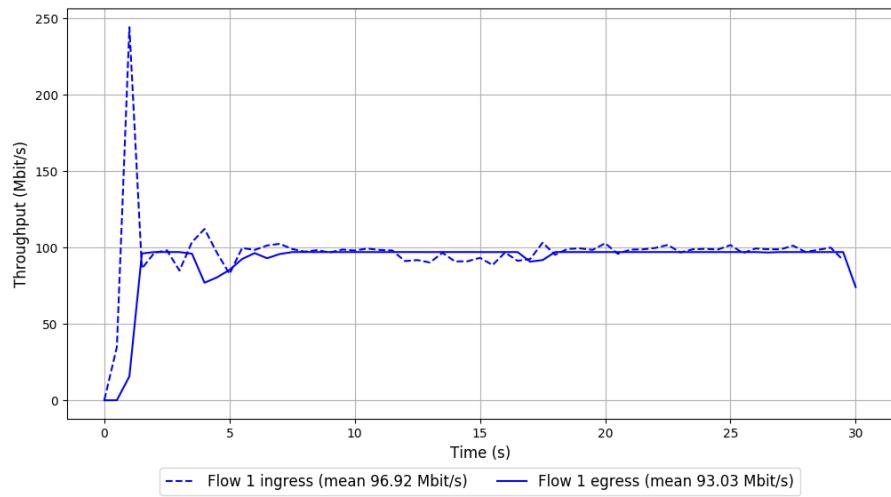


Run 4: Statistics of FillP

```
Start at: 2018-09-06 15:21:37
End at: 2018-09-06 15:22:07
Local clock offset: 4.568 ms
Remote clock offset: 1.83 ms

# Below is generated by plot.py at 2018-09-06 16:00:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.03 Mbit/s
95th percentile per-packet one-way delay: 798.189 ms
Loss rate: 4.51%
-- Flow 1:
Average throughput: 93.03 Mbit/s
95th percentile per-packet one-way delay: 798.189 ms
Loss rate: 4.51%
```

## Run 4: Report of FillP — Data Link

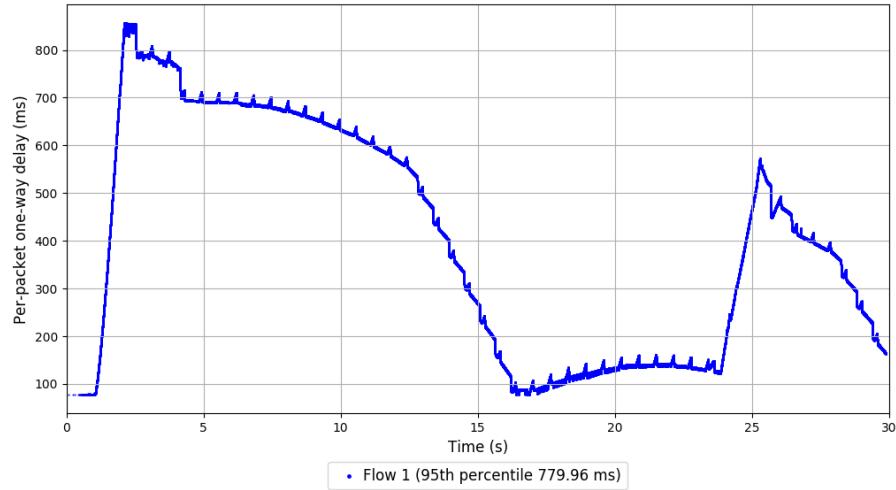
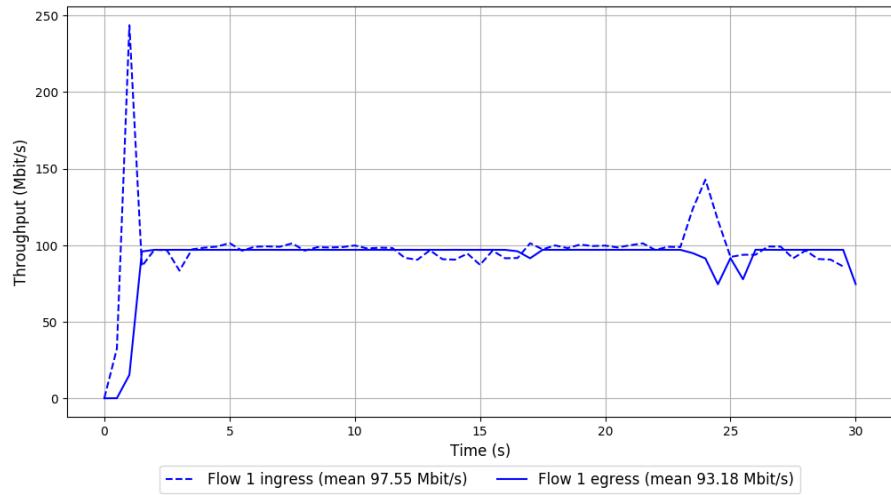


```
Run 5: Statistics of FillP
```

```
Start at: 2018-09-06 15:43:17
End at: 2018-09-06 15:43:47
Local clock offset: 3.645 ms
Remote clock offset: 3.273 ms

# Below is generated by plot.py at 2018-09-06 16:00:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.18 Mbit/s
95th percentile per-packet one-way delay: 779.957 ms
Loss rate: 4.97%
-- Flow 1:
Average throughput: 93.18 Mbit/s
95th percentile per-packet one-way delay: 779.957 ms
Loss rate: 4.97%
```

### Run 5: Report of FillP — Data Link

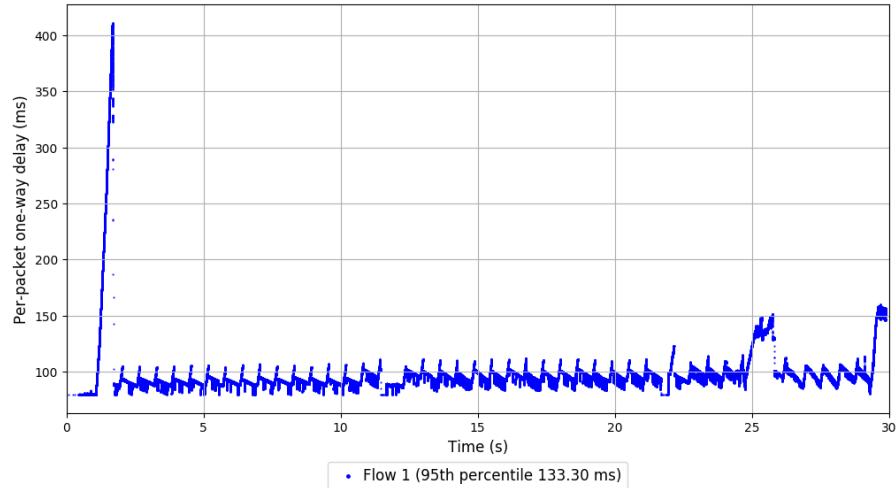
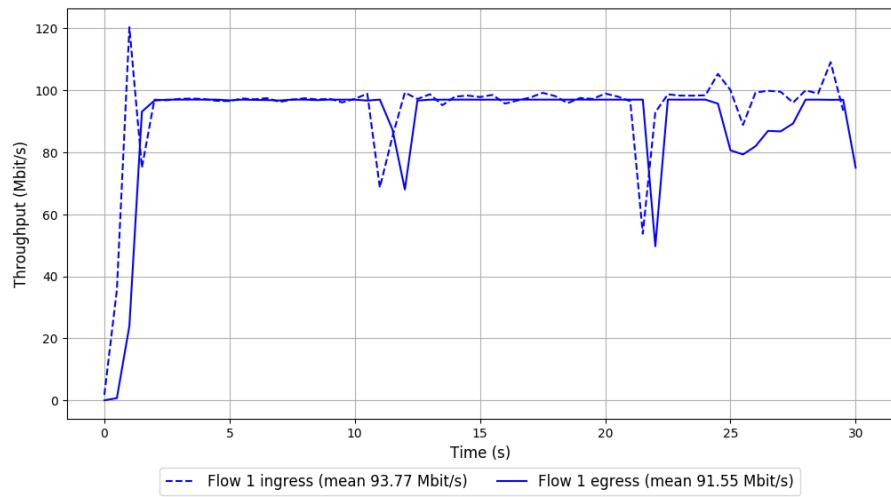


```
Run 1: Statistics of FillP-Sheep
```

```
Start at: 2018-09-06 14:15:18
End at: 2018-09-06 14:15:48
Local clock offset: 4.575 ms
Remote clock offset: 0.677 ms

# Below is generated by plot.py at 2018-09-06 16:00:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.55 Mbit/s
95th percentile per-packet one-way delay: 133.301 ms
Loss rate: 2.87%
-- Flow 1:
Average throughput: 91.55 Mbit/s
95th percentile per-packet one-way delay: 133.301 ms
Loss rate: 2.87%
```

### Run 1: Report of FillP-Sheep — Data Link

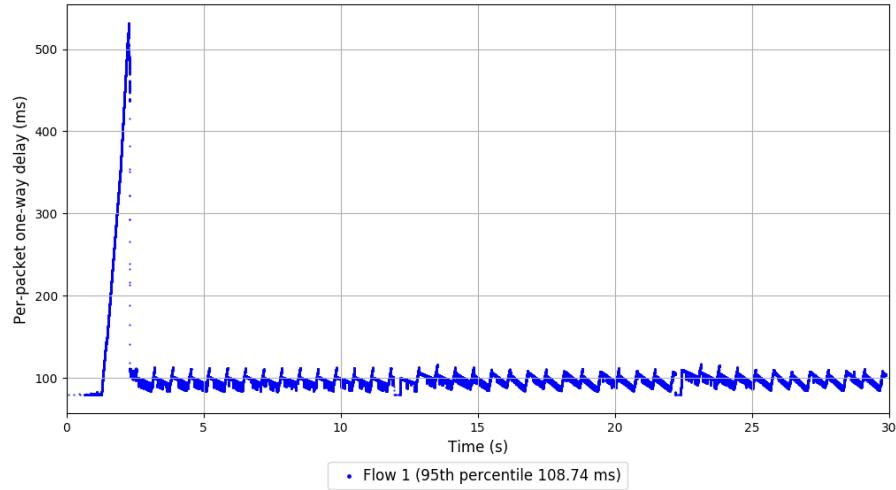
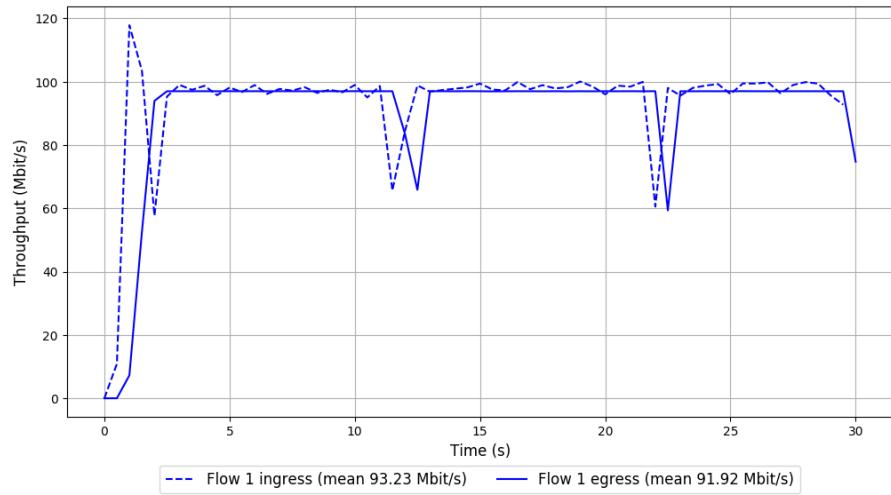


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-09-06 14:36:40
End at: 2018-09-06 14:37:10
Local clock offset: 4.37 ms
Remote clock offset: 2.498 ms

# Below is generated by plot.py at 2018-09-06 16:00:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.92 Mbit/s
95th percentile per-packet one-way delay: 108.744 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 91.92 Mbit/s
95th percentile per-packet one-way delay: 108.744 ms
Loss rate: 1.91%
```

## Run 2: Report of FillP-Sheep — Data Link

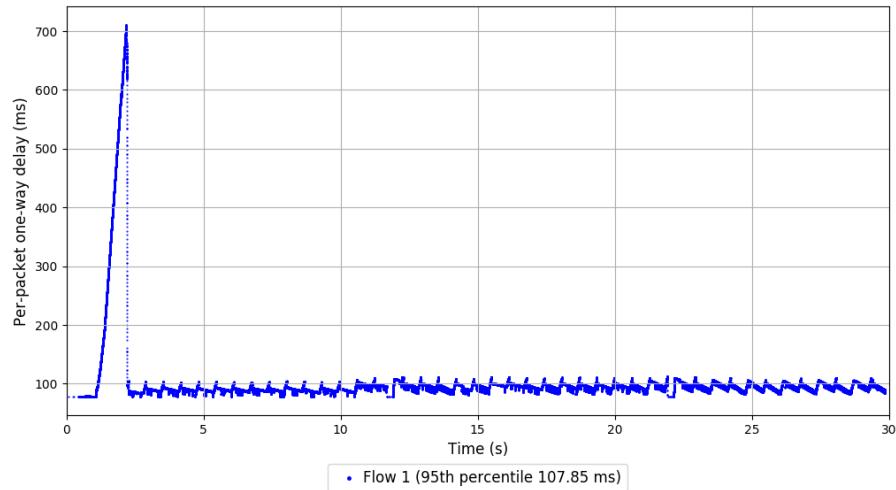
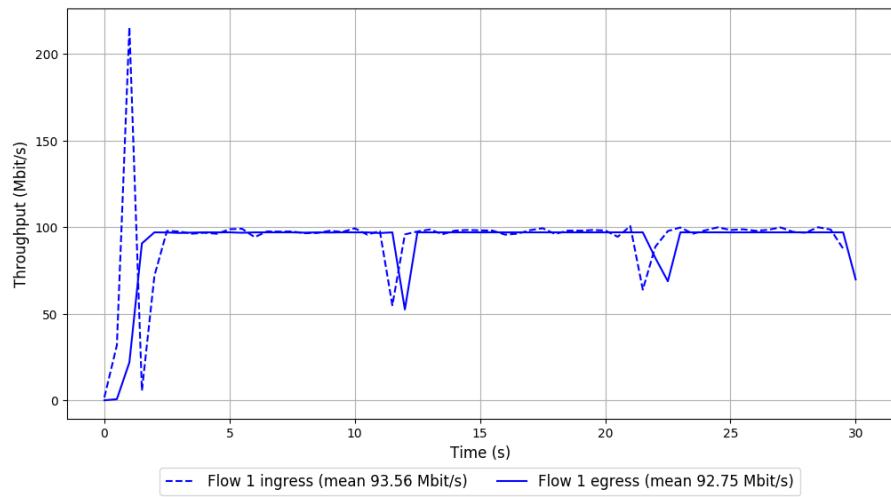


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-09-06 14:57:55
End at: 2018-09-06 14:58:25
Local clock offset: 3.811 ms
Remote clock offset: 1.468 ms

# Below is generated by plot.py at 2018-09-06 16:01:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.75 Mbit/s
95th percentile per-packet one-way delay: 107.850 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 92.75 Mbit/s
95th percentile per-packet one-way delay: 107.850 ms
Loss rate: 1.38%
```

### Run 3: Report of FillP-Sheep — Data Link

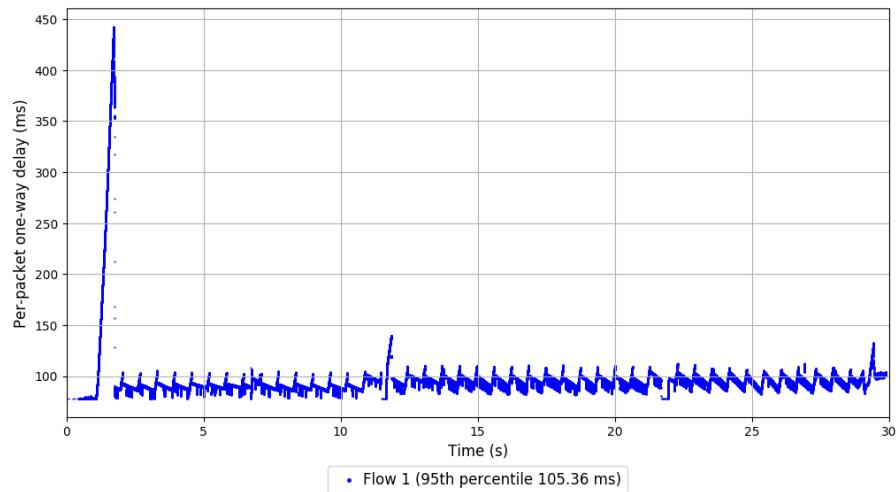
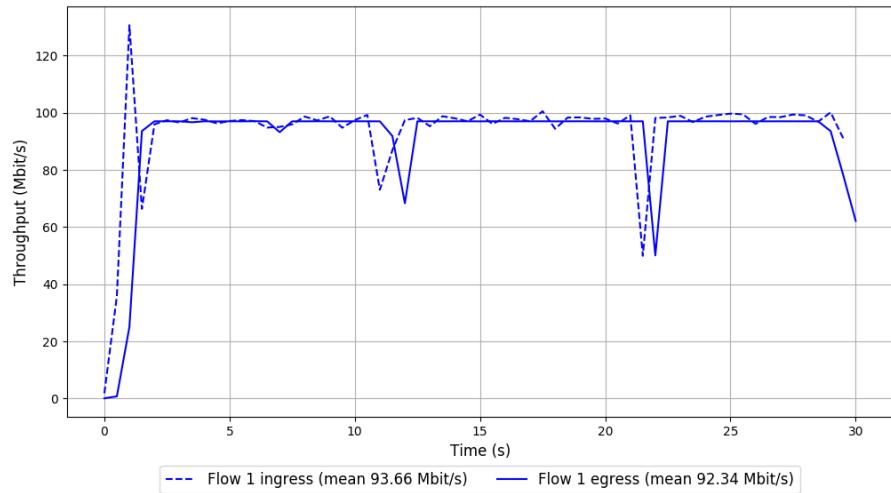


Run 4: Statistics of FillP-Sheep

```
Start at: 2018-09-06 15:19:12
End at: 2018-09-06 15:19:42
Local clock offset: 4.622 ms
Remote clock offset: 1.79 ms

# Below is generated by plot.py at 2018-09-06 16:01:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.34 Mbit/s
95th percentile per-packet one-way delay: 105.356 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 92.34 Mbit/s
95th percentile per-packet one-way delay: 105.356 ms
Loss rate: 1.92%
```

## Run 4: Report of FillP-Sheep — Data Link

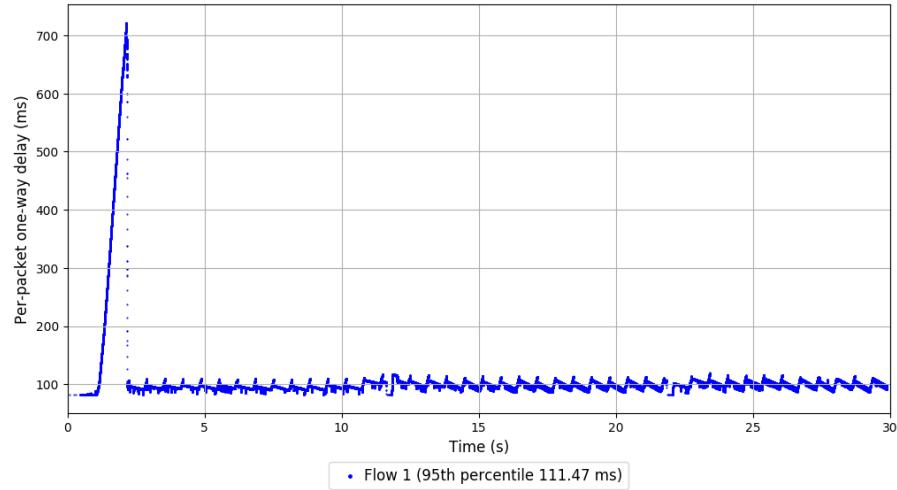
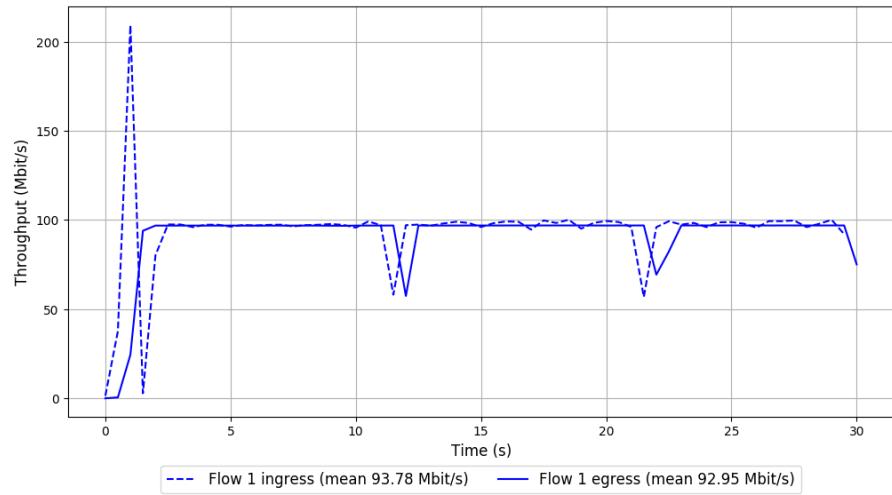


Run 5: Statistics of FillP-Sheep

```
Start at: 2018-09-06 15:40:52
End at: 2018-09-06 15:41:22
Local clock offset: 4.437 ms
Remote clock offset: 0.918 ms

# Below is generated by plot.py at 2018-09-06 16:01:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 111.472 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 111.472 ms
Loss rate: 1.39%
```

Run 5: Report of FillP-Sheep — Data Link

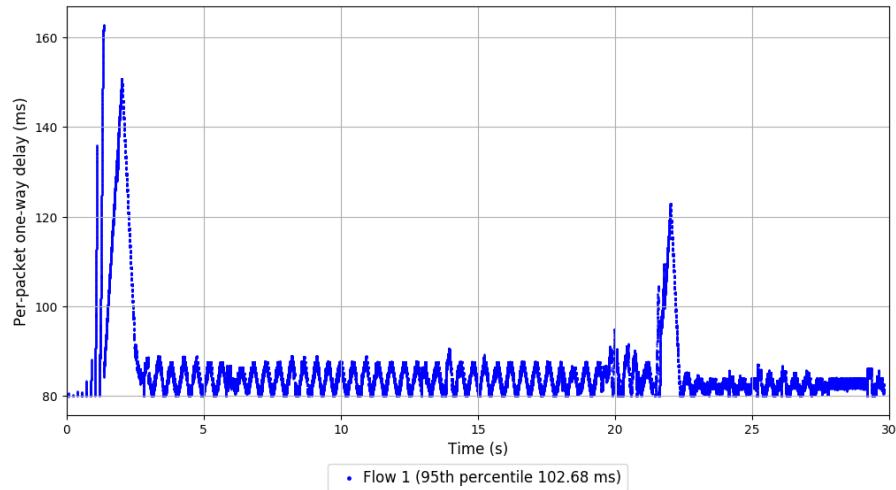
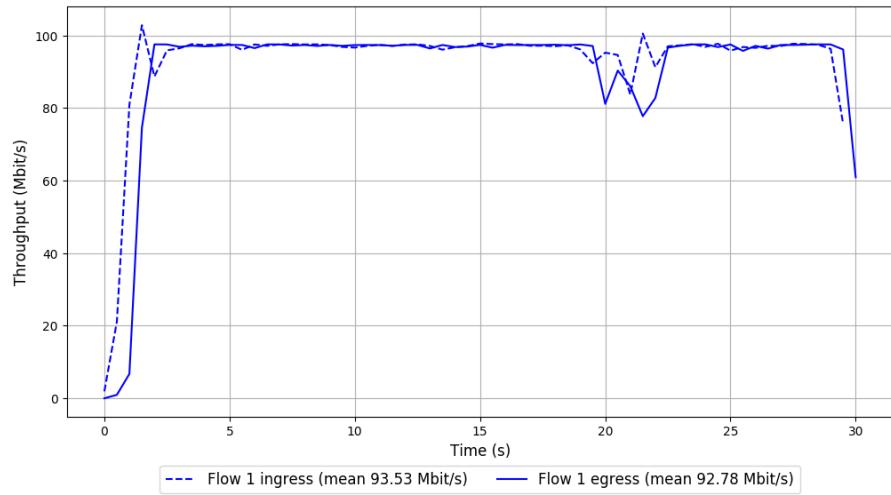


Run 1: Statistics of Indigo

```
Start at: 2018-09-06 14:09:22
End at: 2018-09-06 14:09:52
Local clock offset: 5.27 ms
Remote clock offset: -0.586 ms

# Below is generated by plot.py at 2018-09-06 16:01:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.78 Mbit/s
95th percentile per-packet one-way delay: 102.683 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 92.78 Mbit/s
95th percentile per-packet one-way delay: 102.683 ms
Loss rate: 1.32%
```

## Run 1: Report of Indigo — Data Link

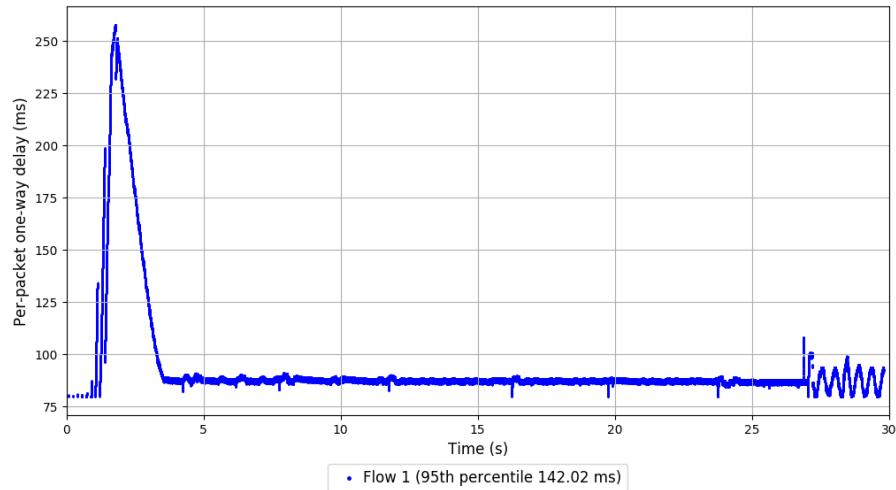
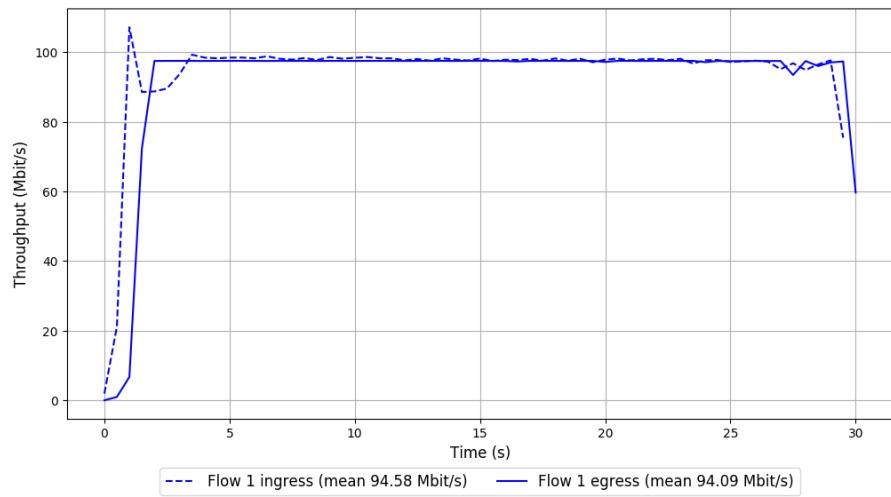


Run 2: Statistics of Indigo

```
Start at: 2018-09-06 14:30:48
End at: 2018-09-06 14:31:18
Local clock offset: 3.778 ms
Remote clock offset: 0.93 ms

# Below is generated by plot.py at 2018-09-06 16:01:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.09 Mbit/s
95th percentile per-packet one-way delay: 142.017 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 94.09 Mbit/s
95th percentile per-packet one-way delay: 142.017 ms
Loss rate: 1.04%
```

## Run 2: Report of Indigo — Data Link

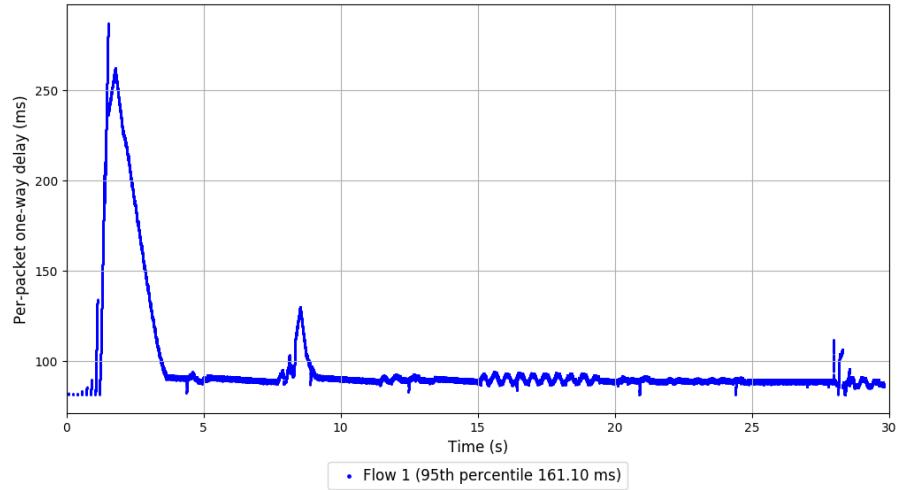
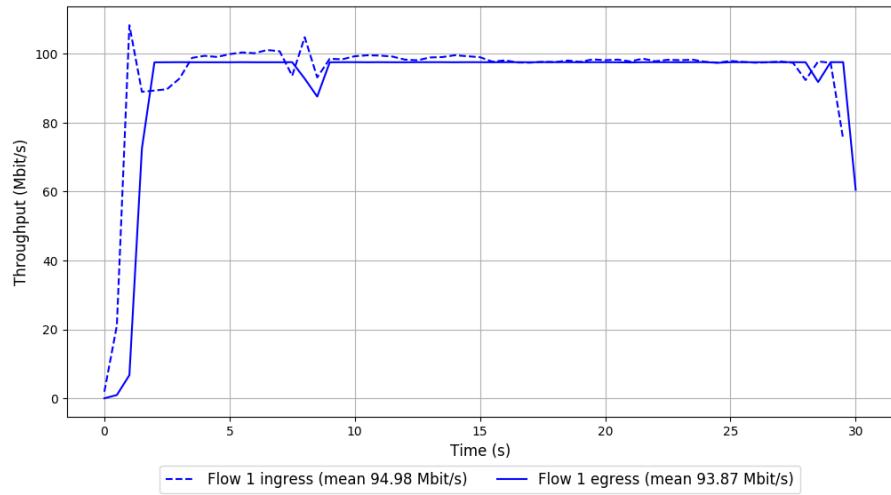


Run 3: Statistics of Indigo

```
Start at: 2018-09-06 14:52:04
End at: 2018-09-06 14:52:34
Local clock offset: 3.739 ms
Remote clock offset: 0.191 ms

# Below is generated by plot.py at 2018-09-06 16:01:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.87 Mbit/s
95th percentile per-packet one-way delay: 161.097 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 93.87 Mbit/s
95th percentile per-packet one-way delay: 161.097 ms
Loss rate: 1.69%
```

### Run 3: Report of Indigo — Data Link

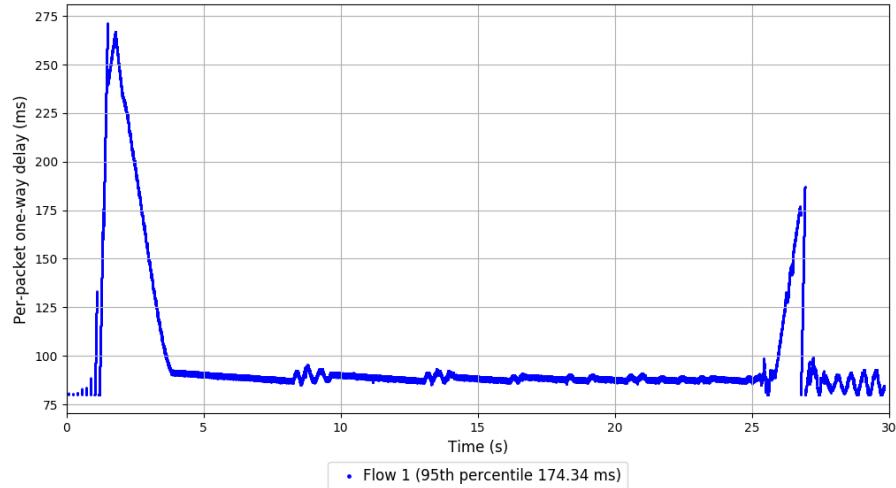
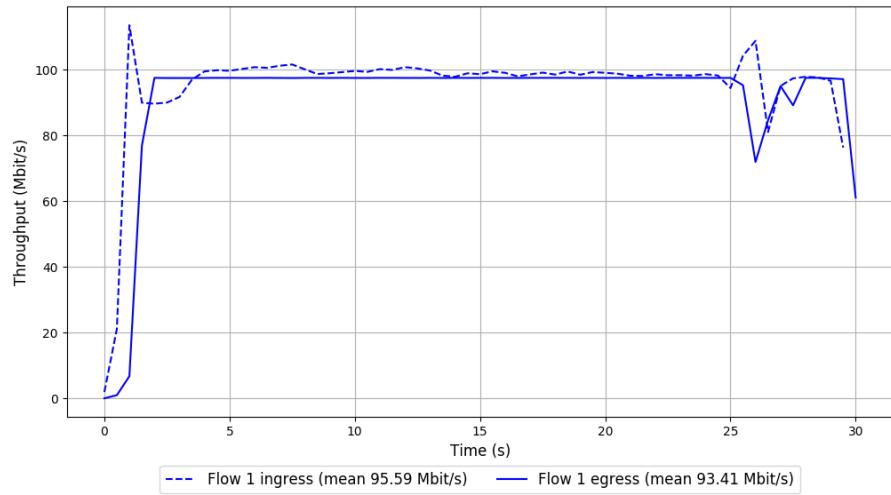


Run 4: Statistics of Indigo

```
Start at: 2018-09-06 15:13:14
End at: 2018-09-06 15:13:44
Local clock offset: 3.914 ms
Remote clock offset: 1.859 ms

# Below is generated by plot.py at 2018-09-06 16:01:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.41 Mbit/s
95th percentile per-packet one-way delay: 174.341 ms
Loss rate: 2.78%
-- Flow 1:
Average throughput: 93.41 Mbit/s
95th percentile per-packet one-way delay: 174.341 ms
Loss rate: 2.78%
```

## Run 4: Report of Indigo — Data Link

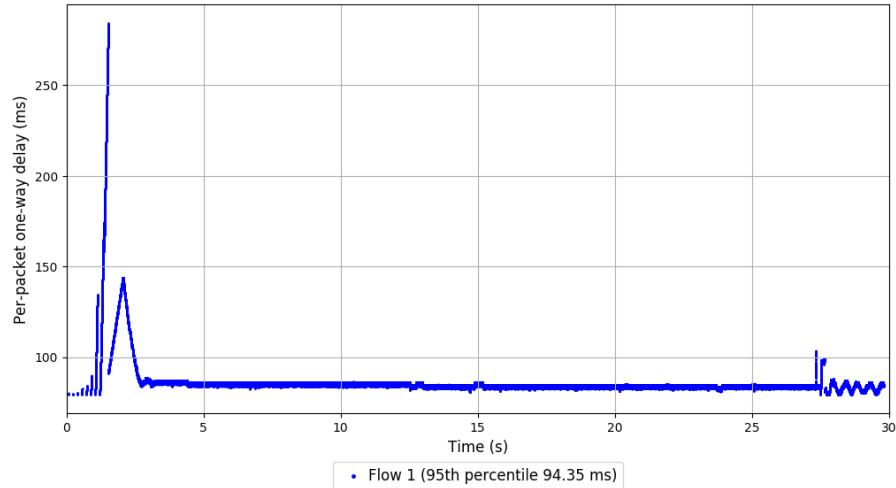
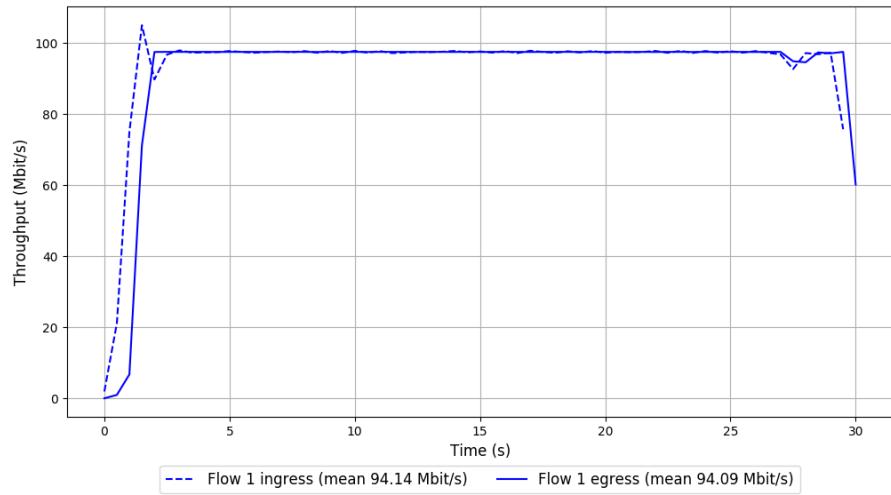


Run 5: Statistics of Indigo

```
Start at: 2018-09-06 15:34:59
End at: 2018-09-06 15:35:29
Local clock offset: 3.709 ms
Remote clock offset: 2.351 ms

# Below is generated by plot.py at 2018-09-06 16:01:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.09 Mbit/s
95th percentile per-packet one-way delay: 94.348 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 94.09 Mbit/s
95th percentile per-packet one-way delay: 94.348 ms
Loss rate: 0.58%
```

## Run 5: Report of Indigo — Data Link

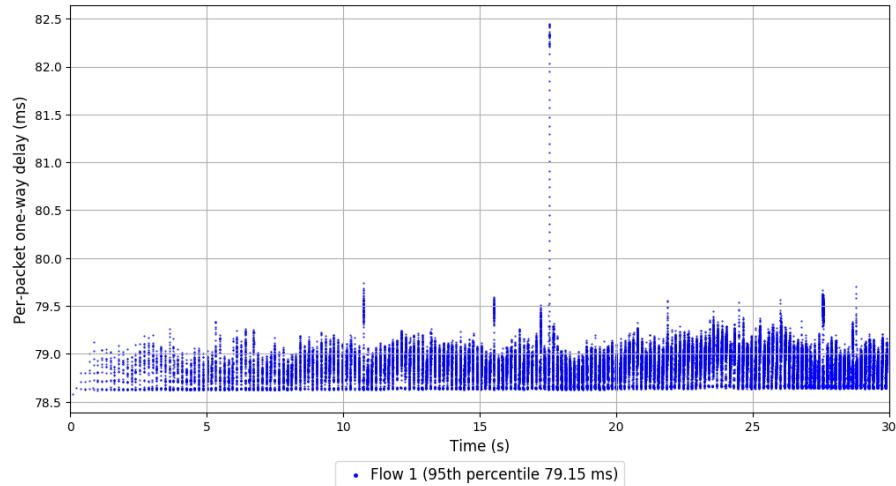
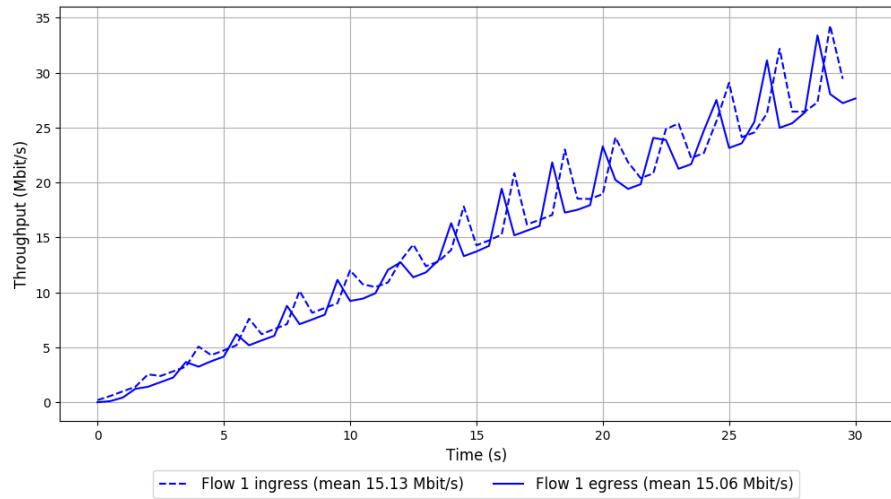


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-09-06 14:23:44
End at: 2018-09-06 14:24:14
Local clock offset: 4.772 ms
Remote clock offset: 0.734 ms

# Below is generated by plot.py at 2018-09-06 16:01:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.06 Mbit/s
95th percentile per-packet one-way delay: 79.148 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 15.06 Mbit/s
95th percentile per-packet one-way delay: 79.148 ms
Loss rate: 1.03%
```

## Run 1: Report of LEDBAT — Data Link

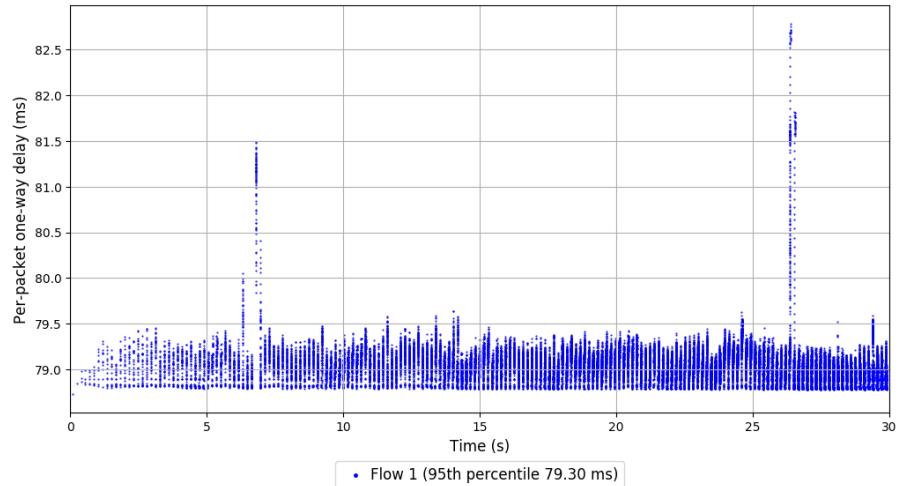
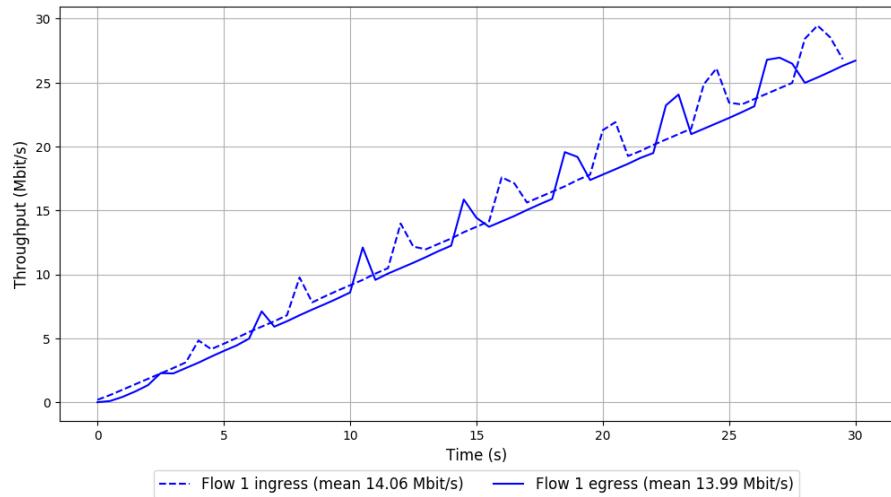


Run 2: Statistics of LEDBAT

```
Start at: 2018-09-06 14:45:06
End at: 2018-09-06 14:45:36
Local clock offset: 3.597 ms
Remote clock offset: 2.307 ms

# Below is generated by plot.py at 2018-09-06 16:01:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.99 Mbit/s
95th percentile per-packet one-way delay: 79.297 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 13.99 Mbit/s
95th percentile per-packet one-way delay: 79.297 ms
Loss rate: 1.07%
```

## Run 2: Report of LEDBAT — Data Link

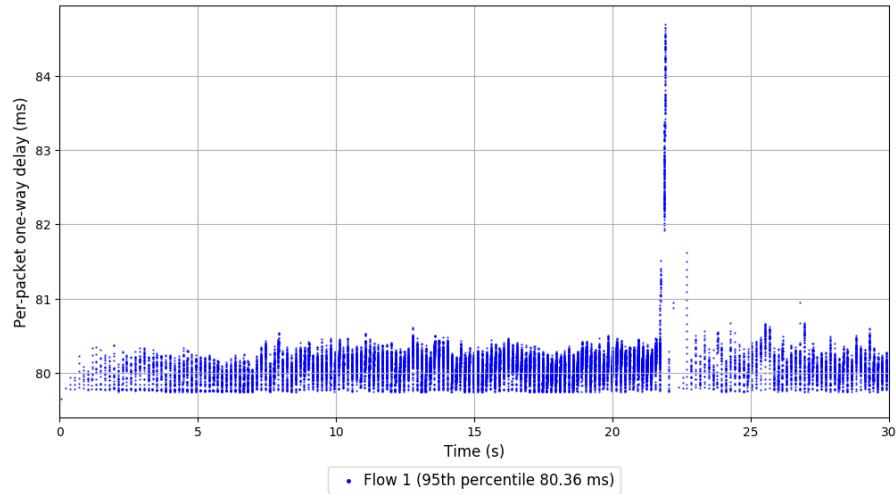
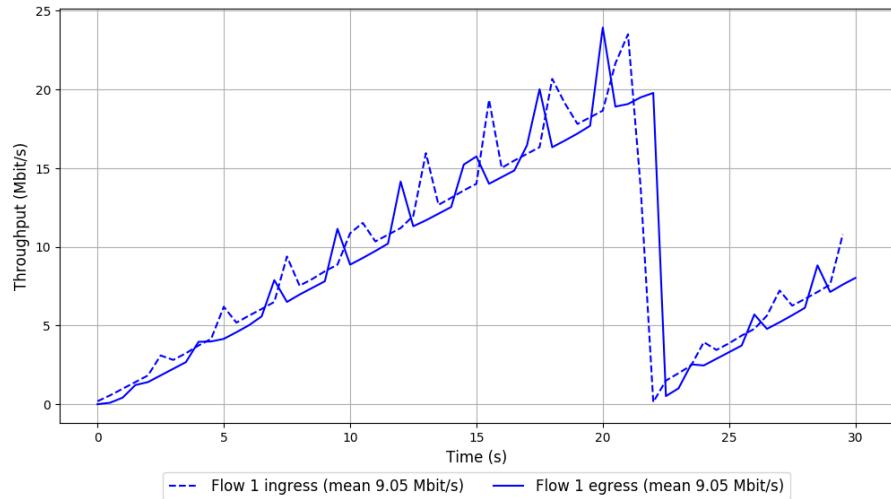


Run 3: Statistics of LEDBAT

```
Start at: 2018-09-06 15:06:17
End at: 2018-09-06 15:06:47
Local clock offset: 3.885 ms
Remote clock offset: 1.478 ms

# Below is generated by plot.py at 2018-09-06 16:01:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 80.359 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 80.359 ms
Loss rate: 0.54%
```

### Run 3: Report of LEDBAT — Data Link

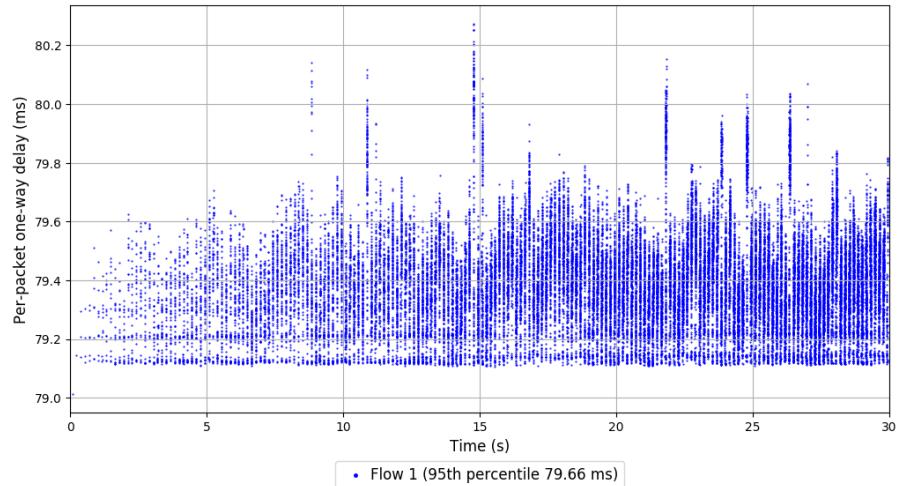
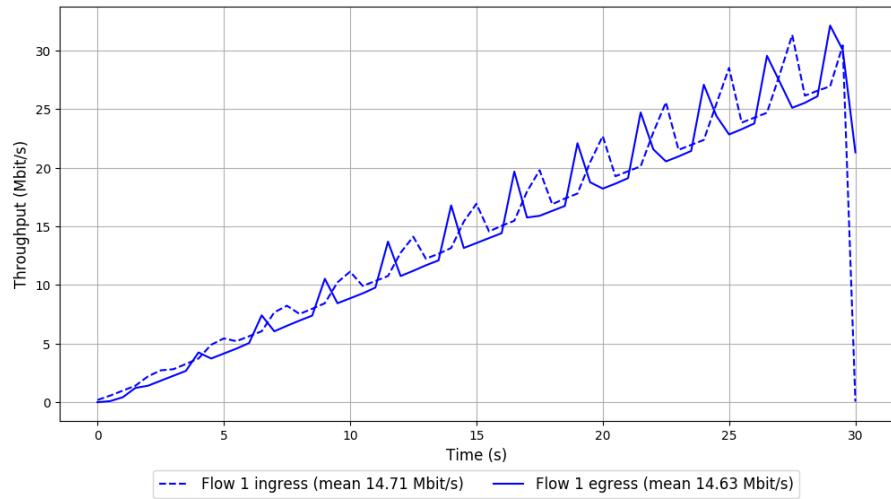


Run 4: Statistics of LEDBAT

```
Start at: 2018-09-06 15:28:00
End at: 2018-09-06 15:28:30
Local clock offset: 3.686 ms
Remote clock offset: 3.226 ms

# Below is generated by plot.py at 2018-09-06 16:01:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.63 Mbit/s
95th percentile per-packet one-way delay: 79.656 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 14.63 Mbit/s
95th percentile per-packet one-way delay: 79.656 ms
Loss rate: 1.04%
```

## Run 4: Report of LEDBAT — Data Link

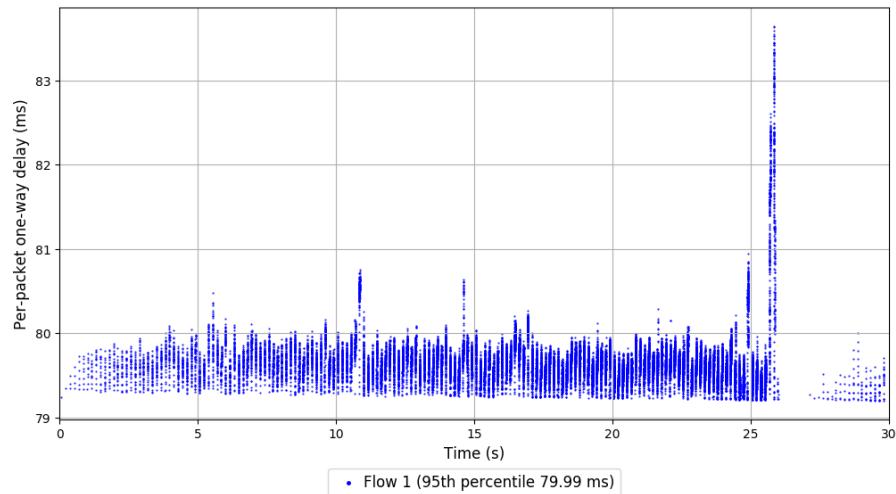
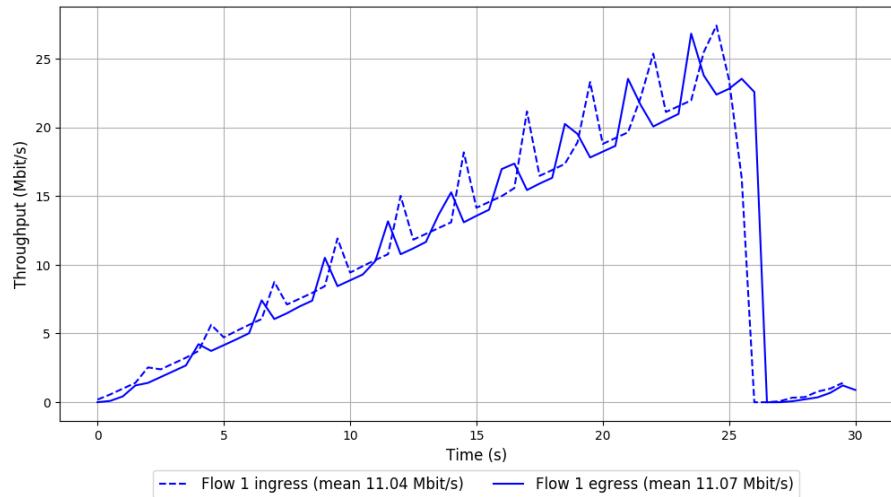


```
Run 5: Statistics of LEDBAT
```

```
Start at: 2018-09-06 15:49:15
End at: 2018-09-06 15:49:45
Local clock offset: 5.526 ms
Remote clock offset: 3.39 ms

# Below is generated by plot.py at 2018-09-06 16:01:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.07 Mbit/s
95th percentile per-packet one-way delay: 79.994 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 11.07 Mbit/s
95th percentile per-packet one-way delay: 79.994 ms
Loss rate: 0.28%
```

Run 5: Report of LEDBAT — Data Link

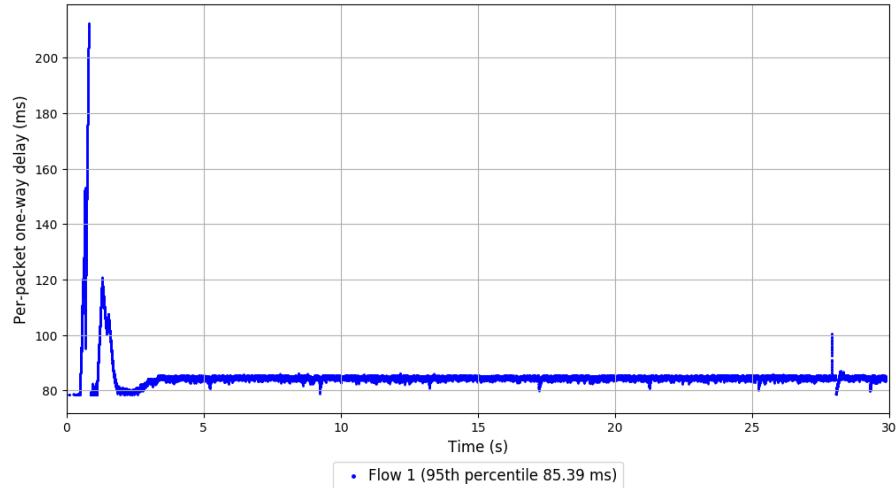
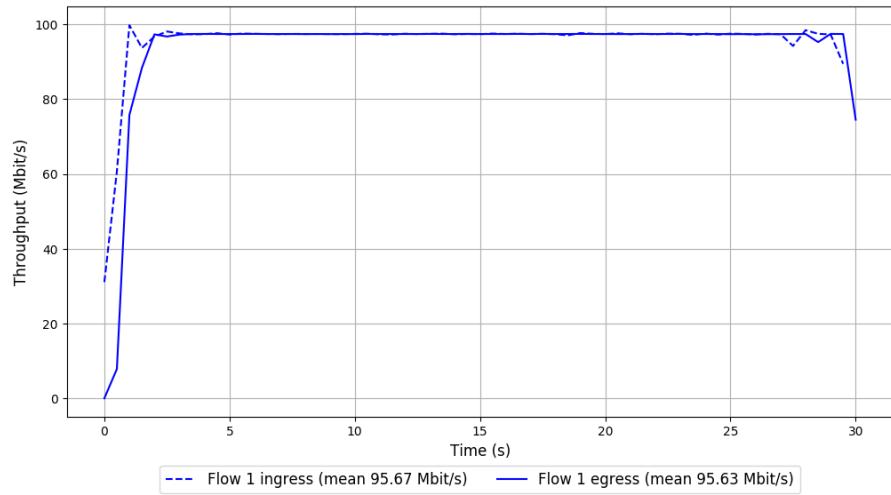


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-09-06 14:18:54
End at: 2018-09-06 14:19:24
Local clock offset: 5.02 ms
Remote clock offset: 0.795 ms

# Below is generated by plot.py at 2018-09-06 16:02:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.63 Mbit/s
95th percentile per-packet one-way delay: 85.386 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 95.63 Mbit/s
95th percentile per-packet one-way delay: 85.386 ms
Loss rate: 0.55%
```

## Run 1: Report of Indigo-Muses — Data Link

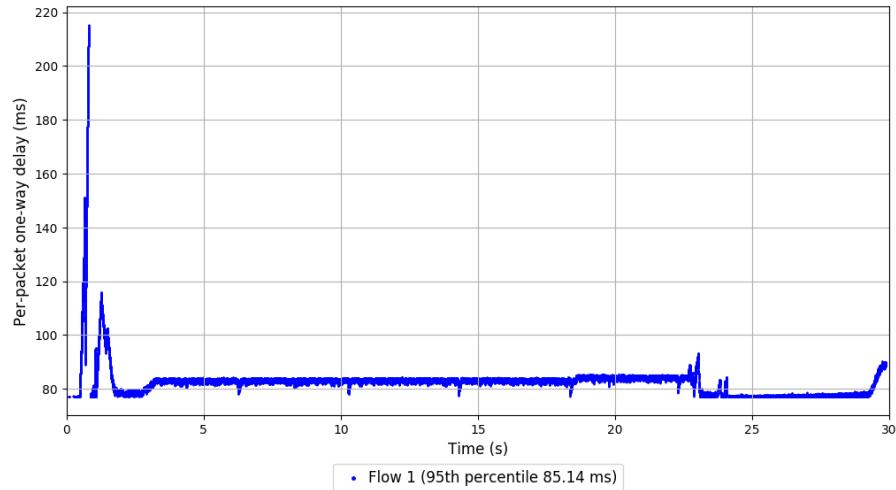
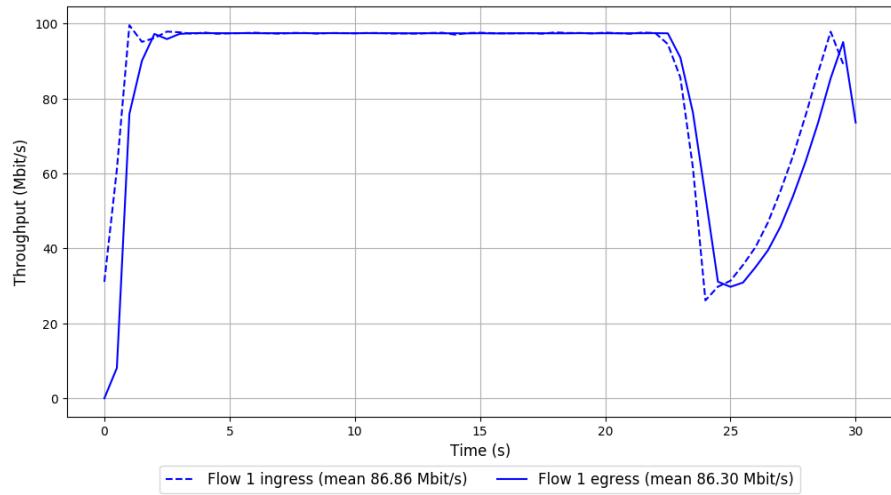


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-09-06 14:40:18
End at: 2018-09-06 14:40:48
Local clock offset: 3.629 ms
Remote clock offset: 1.211 ms

# Below is generated by plot.py at 2018-09-06 16:02:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.30 Mbit/s
95th percentile per-packet one-way delay: 85.136 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 86.30 Mbit/s
95th percentile per-packet one-way delay: 85.136 ms
Loss rate: 1.17%
```

## Run 2: Report of Indigo-Muses — Data Link

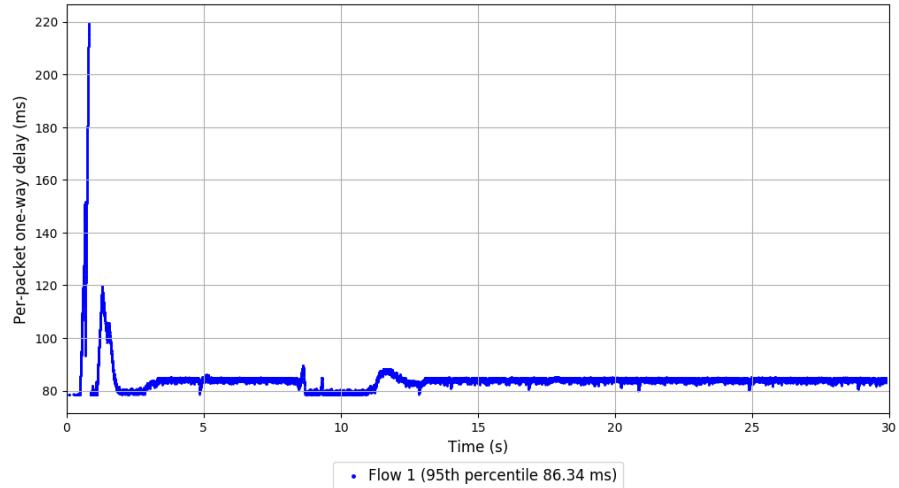
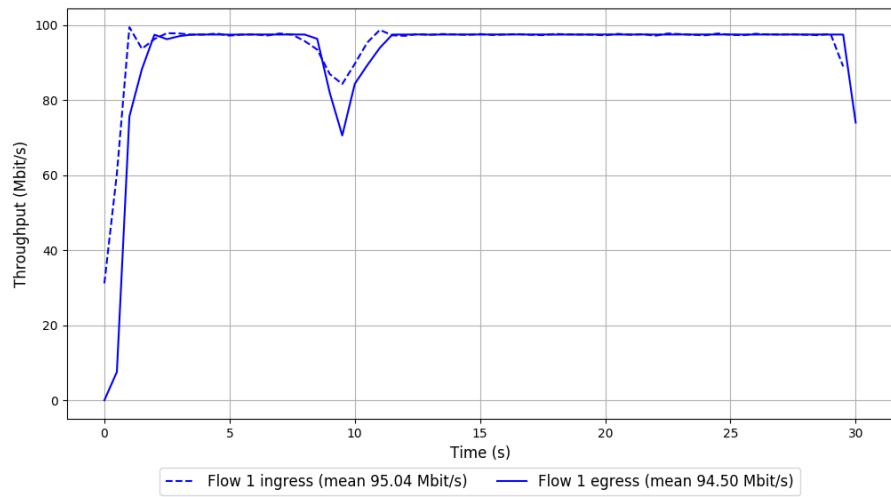


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-09-06 15:01:30
End at: 2018-09-06 15:02:00
Local clock offset: 3.833 ms
Remote clock offset: 2.727 ms

# Below is generated by plot.py at 2018-09-06 16:02:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.50 Mbit/s
95th percentile per-packet one-way delay: 86.341 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 94.50 Mbit/s
95th percentile per-packet one-way delay: 86.341 ms
Loss rate: 1.08%
```

### Run 3: Report of Indigo-Muses — Data Link

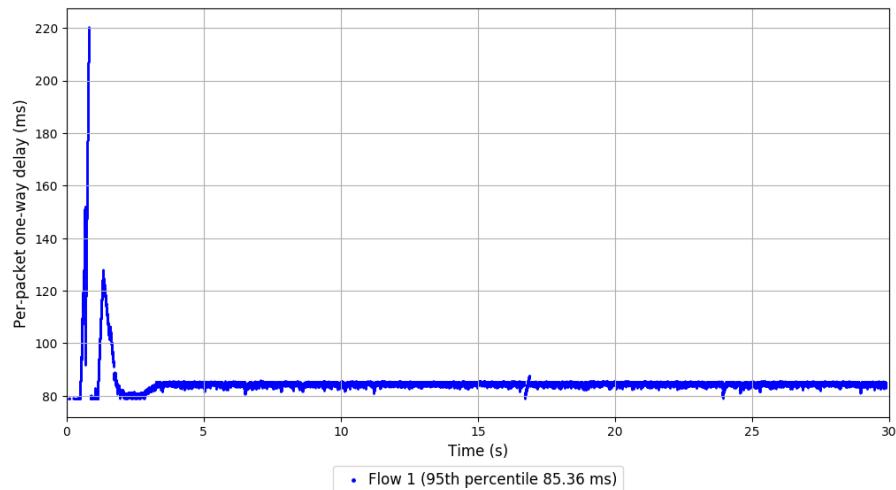
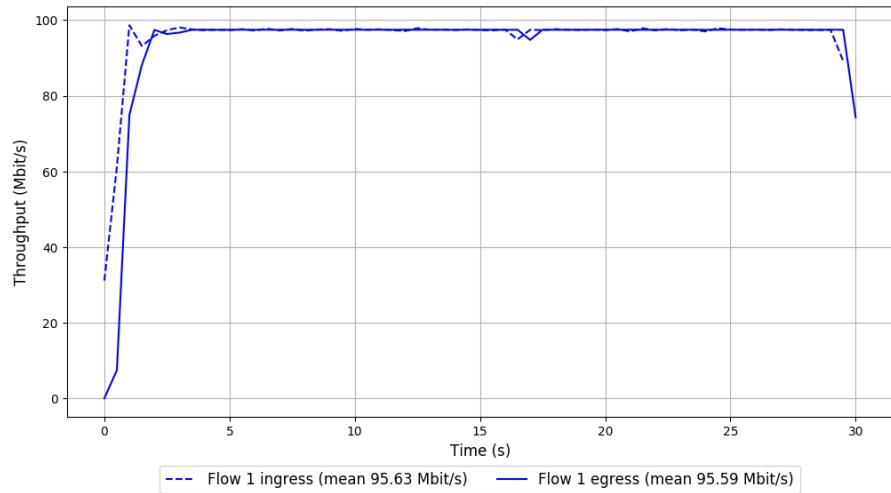


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-09-06 15:22:48
End at: 2018-09-06 15:23:18
Local clock offset: 4.492 ms
Remote clock offset: 0.968 ms

# Below is generated by plot.py at 2018-09-06 16:02:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 85.358 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 95.59 Mbit/s
95th percentile per-packet one-way delay: 85.358 ms
Loss rate: 0.55%
```

## Run 4: Report of Indigo-Muses — Data Link

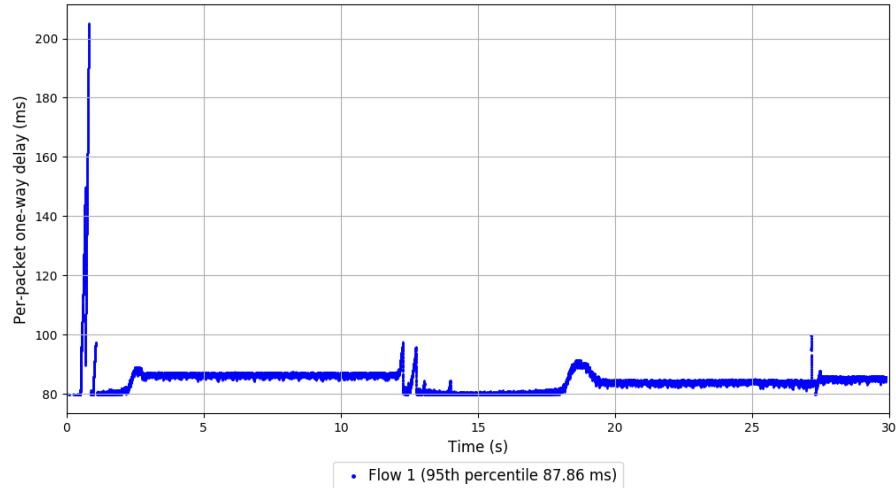
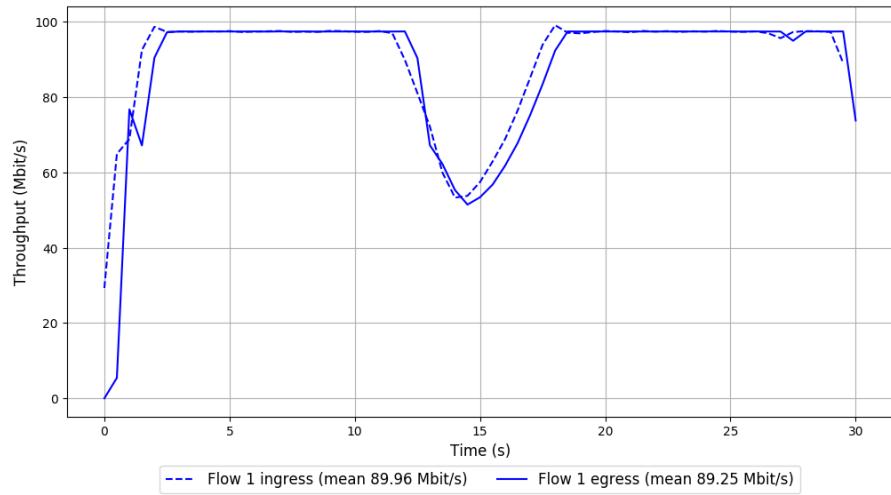


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-09-06 15:44:28
End at: 2018-09-06 15:44:58
Local clock offset: 3.64 ms
Remote clock offset: 2.324 ms

# Below is generated by plot.py at 2018-09-06 16:02:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.25 Mbit/s
95th percentile per-packet one-way delay: 87.857 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 89.25 Mbit/s
95th percentile per-packet one-way delay: 87.857 ms
Loss rate: 1.31%
```

## Run 5: Report of Indigo-Muses — Data Link

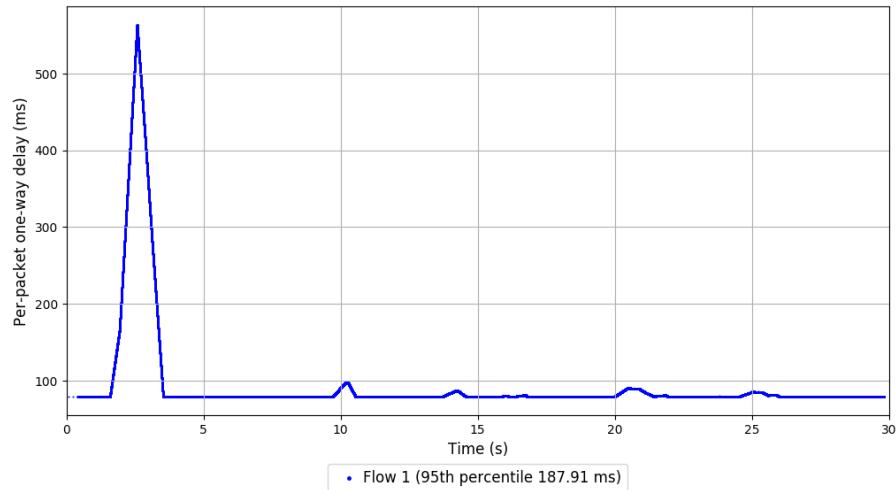
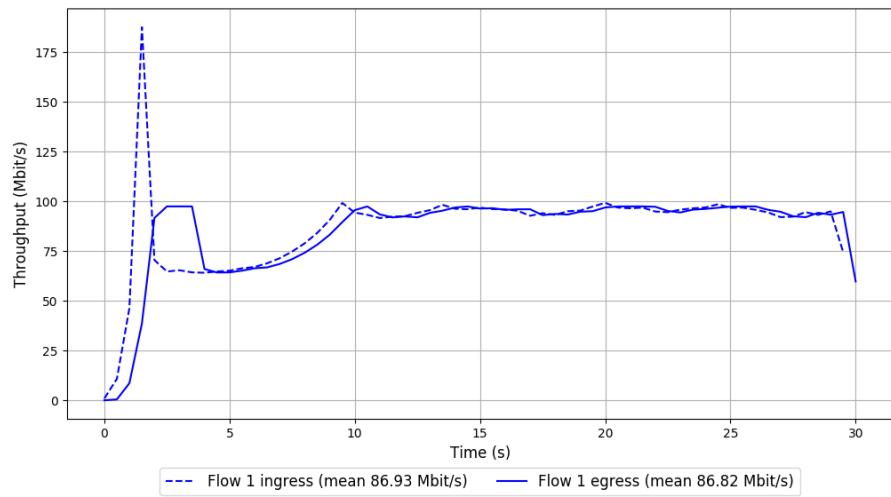


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-09-06 14:12:57
End at: 2018-09-06 14:13:27
Local clock offset: 5.32 ms
Remote clock offset: -0.489 ms

# Below is generated by plot.py at 2018-09-06 16:02:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.82 Mbit/s
95th percentile per-packet one-way delay: 187.909 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 86.82 Mbit/s
95th percentile per-packet one-way delay: 187.909 ms
Loss rate: 0.64%
```

Run 1: Report of PCC-Allegro — Data Link

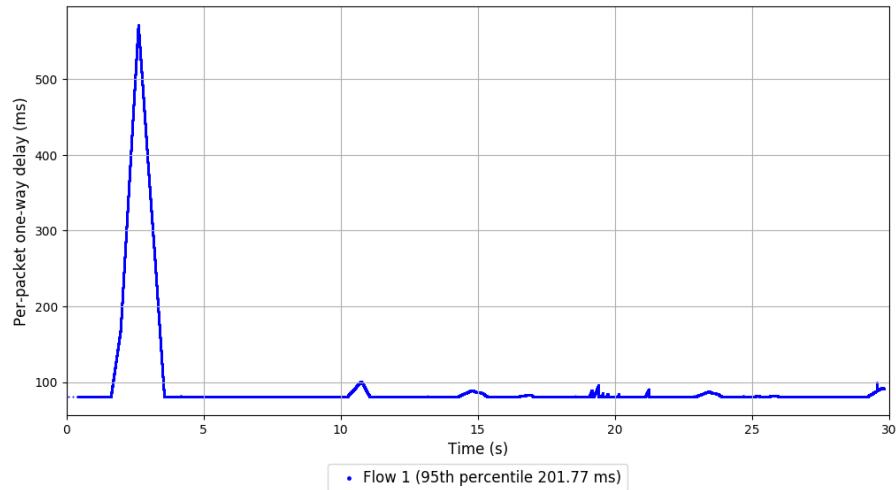
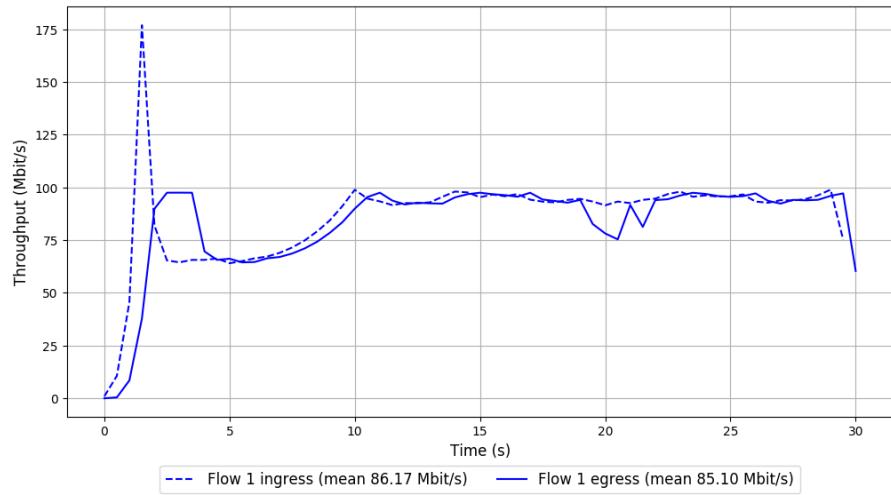


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-09-06 14:34:21
End at: 2018-09-06 14:34:51
Local clock offset: 3.69 ms
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-09-06 16:02:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.10 Mbit/s
95th percentile per-packet one-way delay: 201.770 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 85.10 Mbit/s
95th percentile per-packet one-way delay: 201.770 ms
Loss rate: 1.77%
```

## Run 2: Report of PCC-Allegro — Data Link

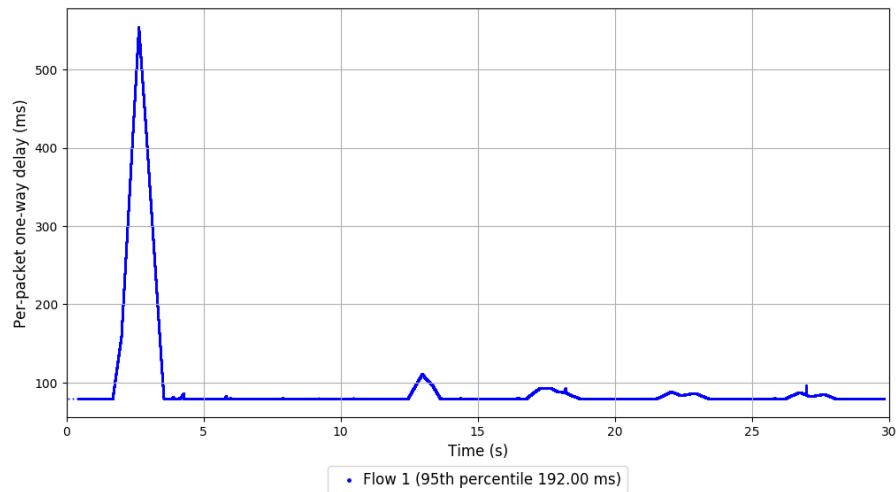
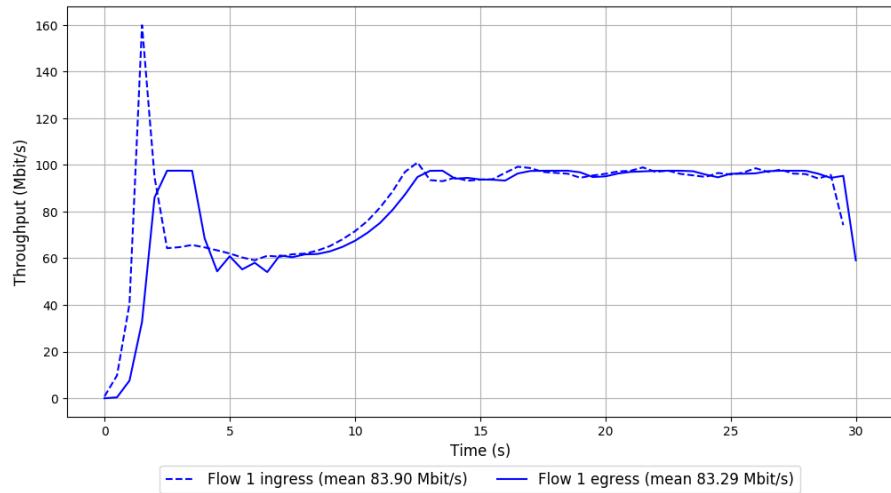


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-09-06 14:55:35
End at: 2018-09-06 14:56:05
Local clock offset: 3.793 ms
Remote clock offset: 1.482 ms

# Below is generated by plot.py at 2018-09-06 16:02:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.29 Mbit/s
95th percentile per-packet one-way delay: 192.005 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 83.29 Mbit/s
95th percentile per-packet one-way delay: 192.005 ms
Loss rate: 1.25%
```

### Run 3: Report of PCC-Allegro — Data Link

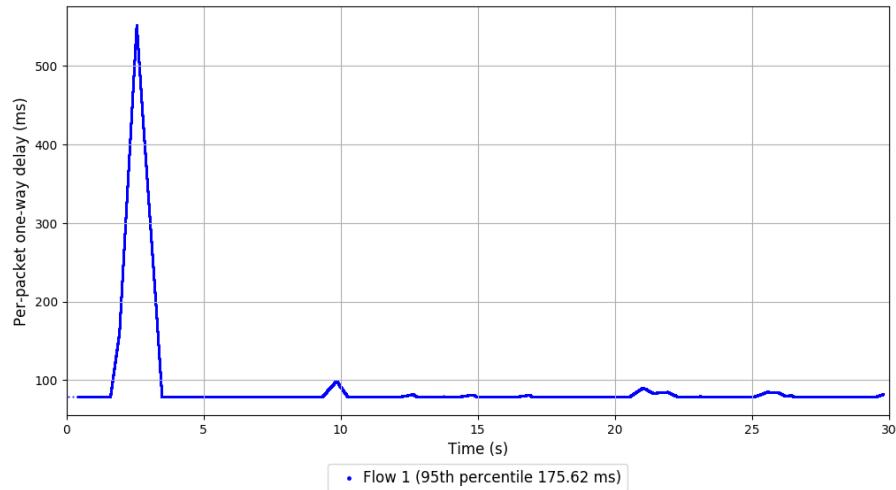
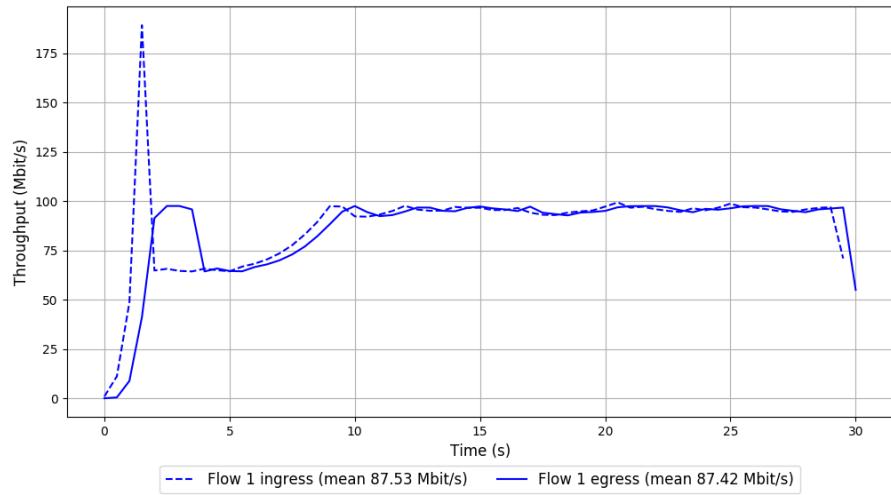


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-09-06 15:16:50
End at: 2018-09-06 15:17:20
Local clock offset: 4.658 ms
Remote clock offset: 1.688 ms

# Below is generated by plot.py at 2018-09-06 16:03:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.42 Mbit/s
95th percentile per-packet one-way delay: 175.618 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 87.42 Mbit/s
95th percentile per-packet one-way delay: 175.618 ms
Loss rate: 0.65%
```

## Run 4: Report of PCC-Allegro — Data Link

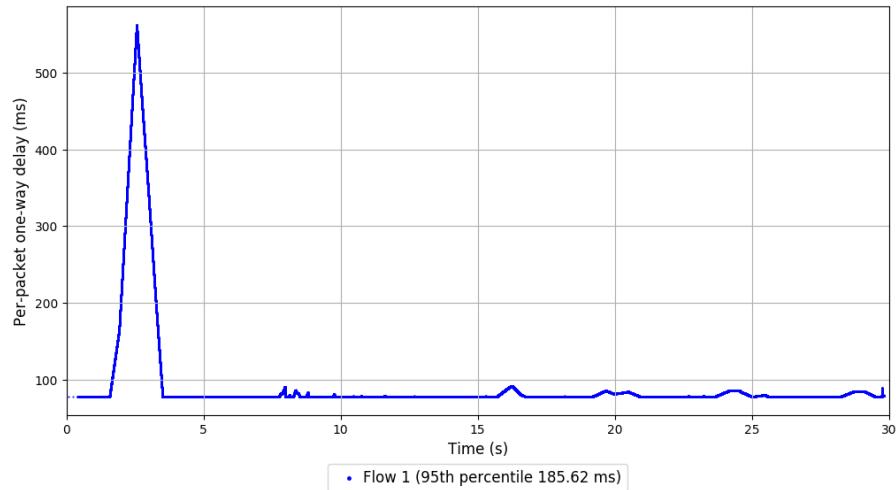
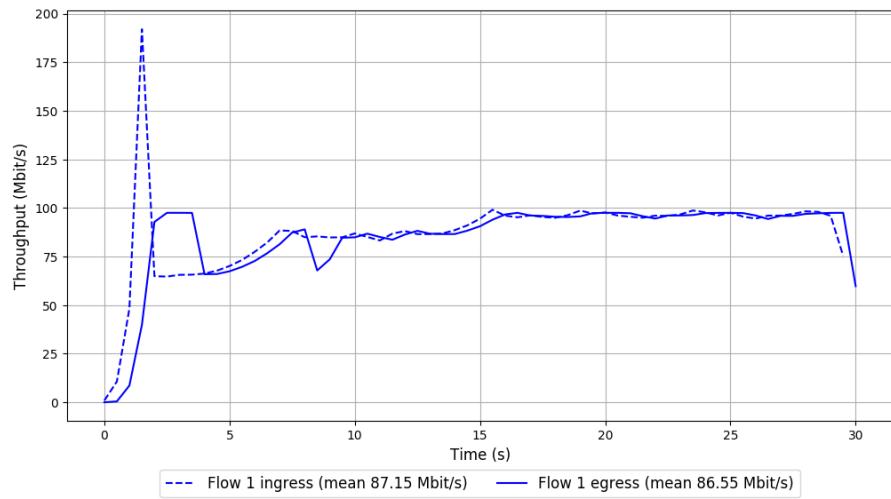


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-09-06 15:38:31
End at: 2018-09-06 15:39:01
Local clock offset: 3.629 ms
Remote clock offset: 1.982 ms

# Below is generated by plot.py at 2018-09-06 16:03:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.55 Mbit/s
95th percentile per-packet one-way delay: 185.620 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 86.55 Mbit/s
95th percentile per-packet one-way delay: 185.620 ms
Loss rate: 1.21%
```

## Run 5: Report of PCC-Allegro — Data Link

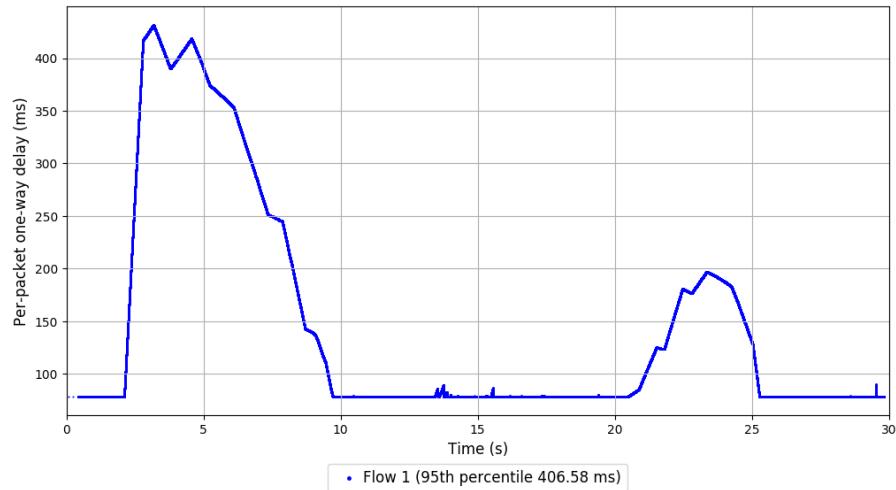
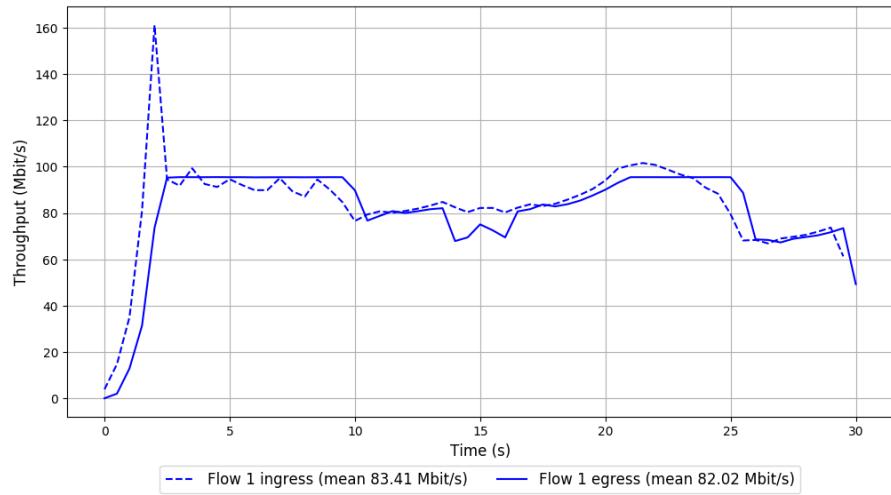


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-09-06 14:16:29
End at: 2018-09-06 14:16:59
Local clock offset: 4.477 ms
Remote clock offset: -0.412 ms

# Below is generated by plot.py at 2018-09-06 16:04:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.02 Mbit/s
95th percentile per-packet one-way delay: 406.581 ms
Loss rate: 2.17%
-- Flow 1:
Average throughput: 82.02 Mbit/s
95th percentile per-packet one-way delay: 406.581 ms
Loss rate: 2.17%
```

Run 1: Report of PCC-Expr — Data Link

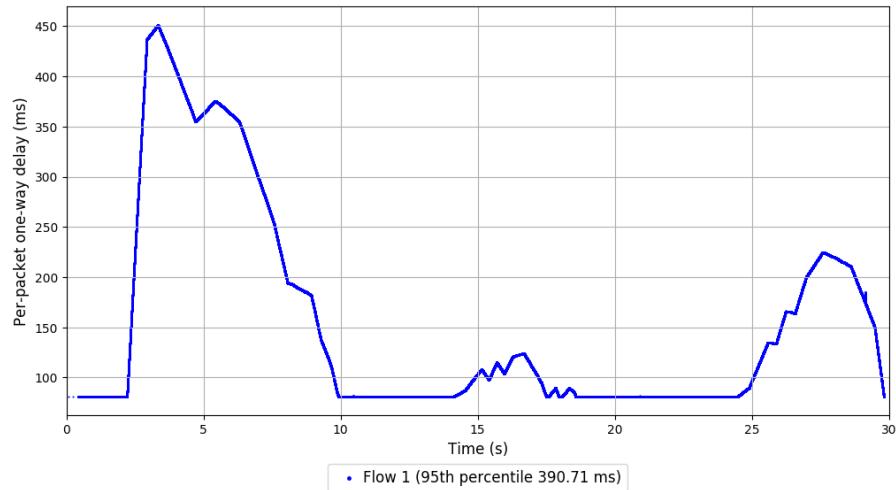
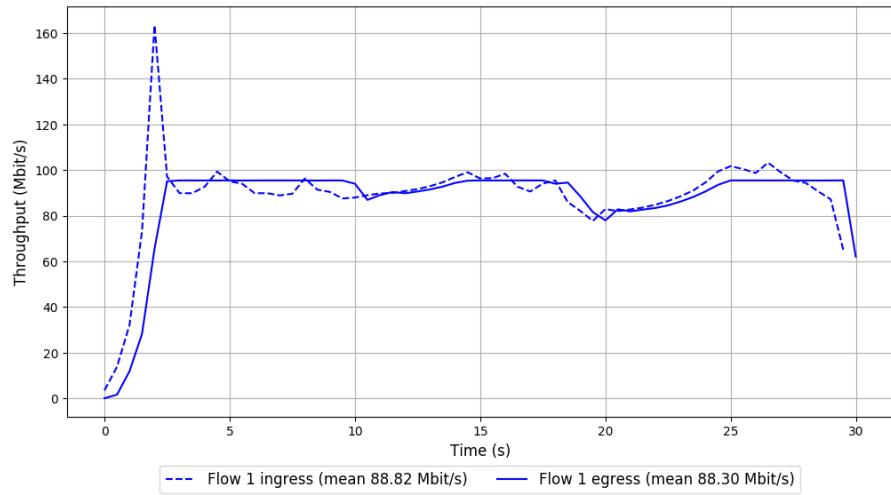


Run 2: Statistics of PCC-Expr

```
Start at: 2018-09-06 14:37:51
End at: 2018-09-06 14:38:21
Local clock offset: 3.604 ms
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2018-09-06 16:04:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.30 Mbit/s
95th percentile per-packet one-way delay: 390.710 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 88.30 Mbit/s
95th percentile per-packet one-way delay: 390.710 ms
Loss rate: 1.11%
```

Run 2: Report of PCC-Expr — Data Link

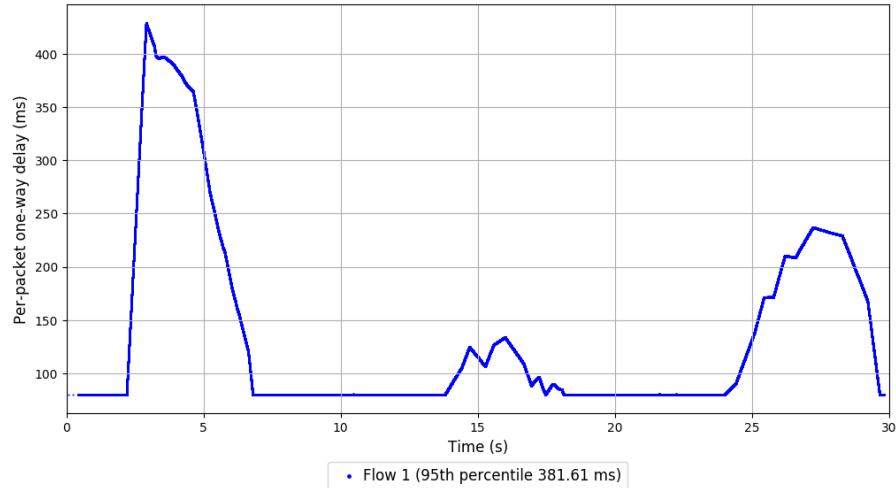
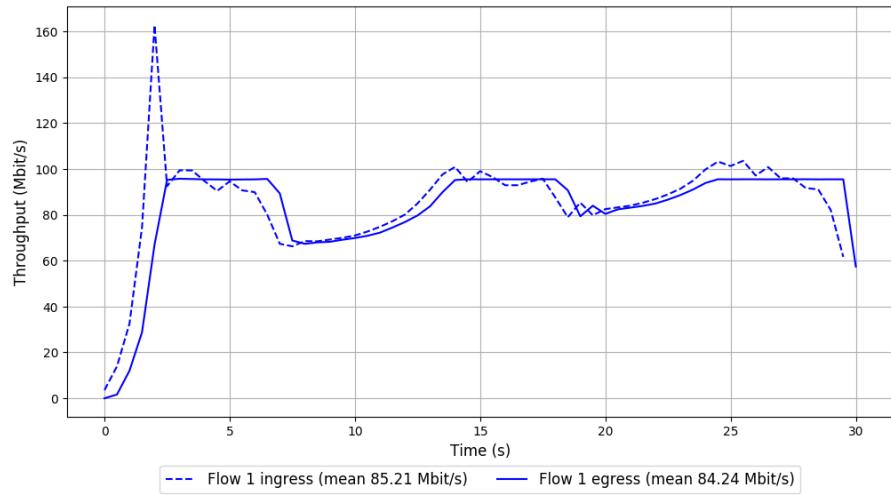


```
Run 3: Statistics of PCC-Expr
```

```
Start at: 2018-09-06 14:59:05
End at: 2018-09-06 14:59:35
Local clock offset: 3.749 ms
Remote clock offset: 1.498 ms

# Below is generated by plot.py at 2018-09-06 16:04:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.24 Mbit/s
95th percentile per-packet one-way delay: 381.614 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 84.24 Mbit/s
95th percentile per-packet one-way delay: 381.614 ms
Loss rate: 1.66%
```

### Run 3: Report of PCC-Expr — Data Link

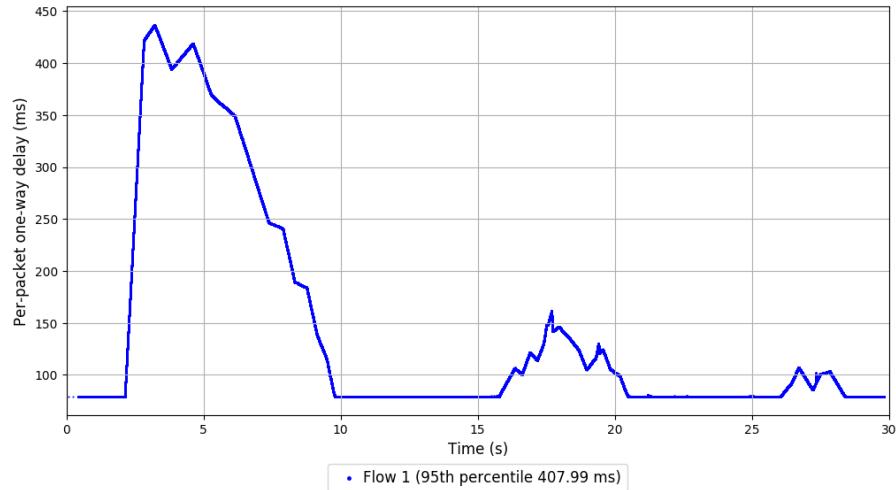
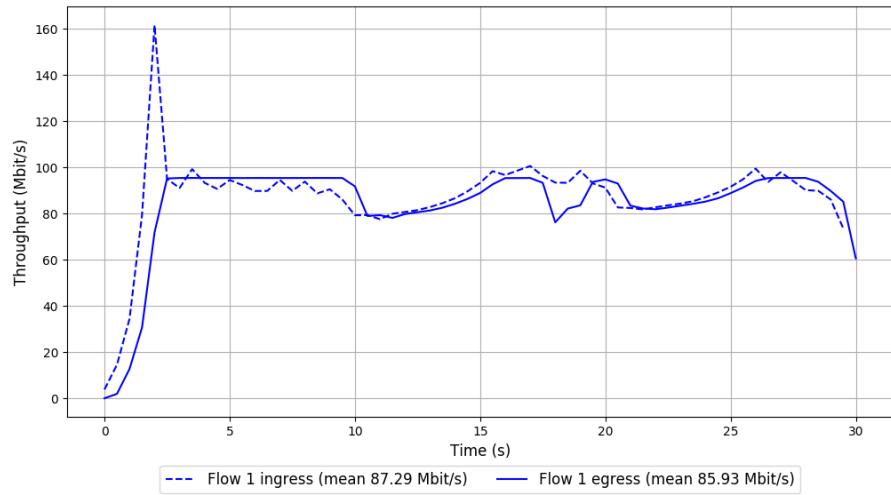


Run 4: Statistics of PCC-Expr

```
Start at: 2018-09-06 15:20:23
End at: 2018-09-06 15:20:53
Local clock offset: 4.587 ms
Remote clock offset: 0.636 ms

# Below is generated by plot.py at 2018-09-06 16:04:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.93 Mbit/s
95th percentile per-packet one-way delay: 407.985 ms
Loss rate: 2.08%
-- Flow 1:
Average throughput: 85.93 Mbit/s
95th percentile per-packet one-way delay: 407.985 ms
Loss rate: 2.08%
```

Run 4: Report of PCC-Expr — Data Link

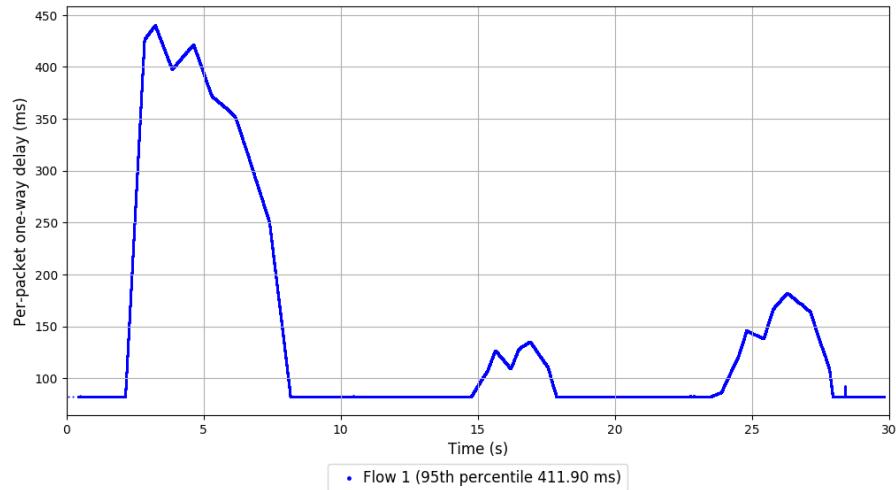
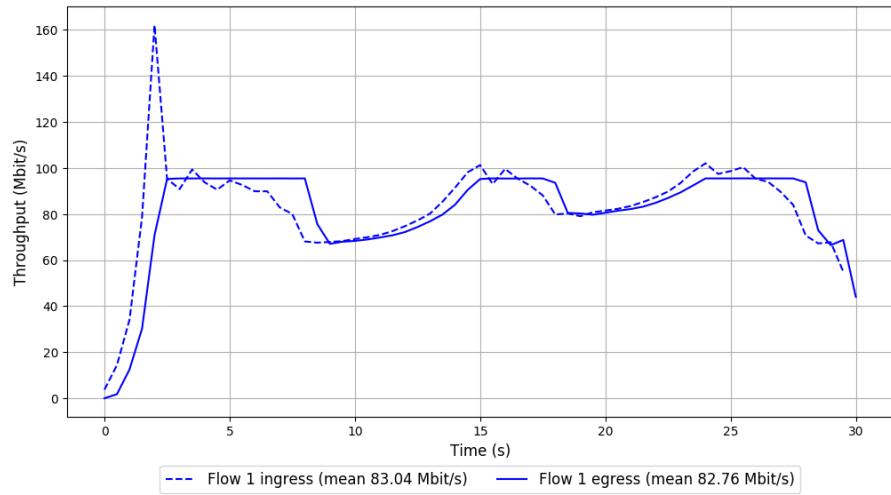


Run 5: Statistics of PCC-Expr

```
Start at: 2018-09-06 15:42:03
End at: 2018-09-06 15:42:33
Local clock offset: 4.434 ms
Remote clock offset: 0.969 ms

# Below is generated by plot.py at 2018-09-06 16:04:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.76 Mbit/s
95th percentile per-packet one-way delay: 411.899 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 82.76 Mbit/s
95th percentile per-packet one-way delay: 411.899 ms
Loss rate: 0.87%
```

Run 5: Report of PCC-Expr — Data Link

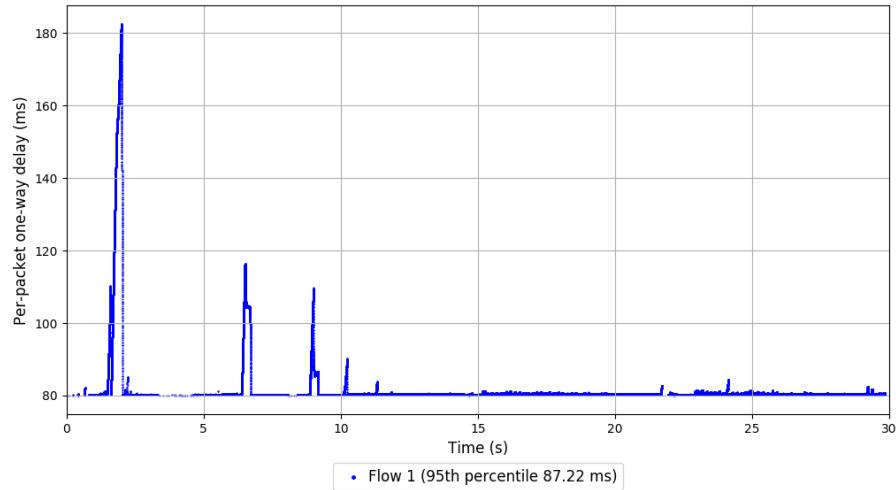
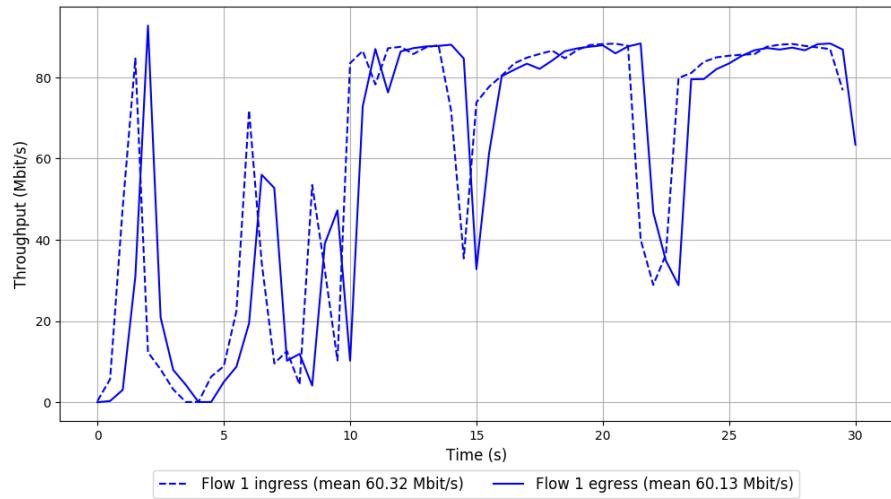


```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-06 14:29:38
End at: 2018-09-06 14:30:08
Local clock offset: 3.808 ms
Remote clock offset: 0.993 ms

# Below is generated by plot.py at 2018-09-06 16:04:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.13 Mbit/s
95th percentile per-packet one-way delay: 87.216 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 60.13 Mbit/s
95th percentile per-packet one-way delay: 87.216 ms
Loss rate: 0.82%
```

## Run 1: Report of QUIC Cubic — Data Link

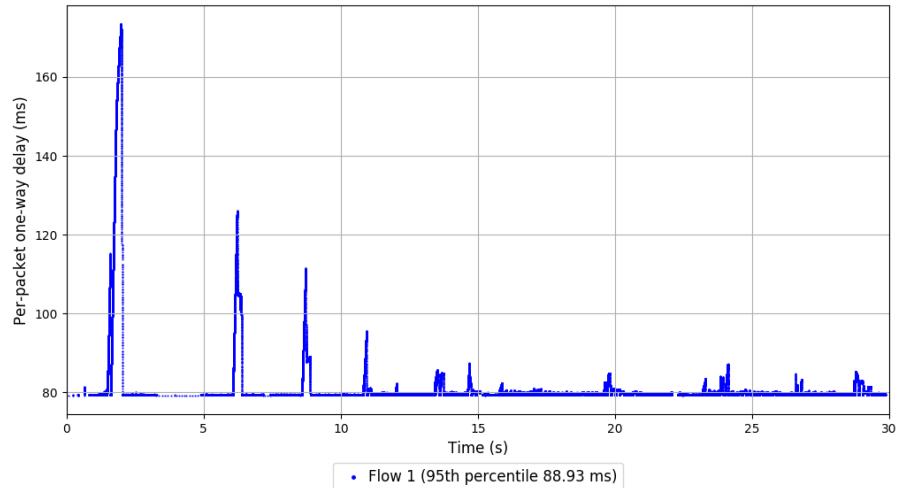
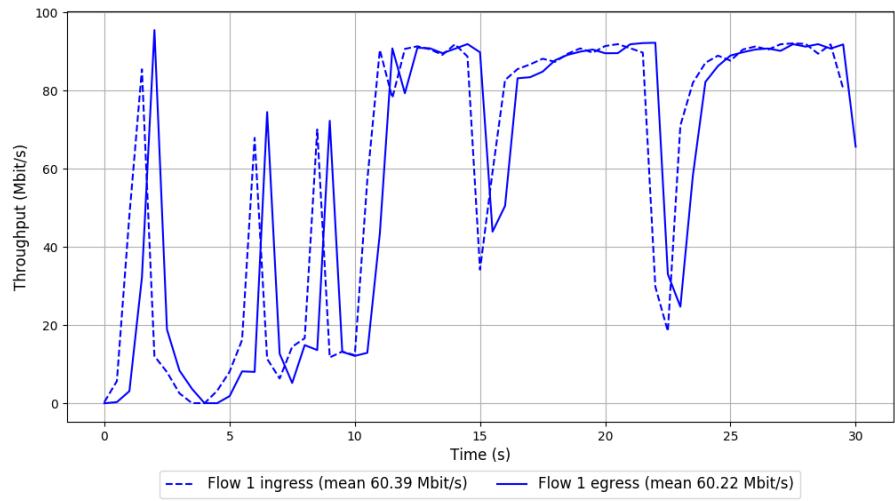


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-09-06 14:50:54
End at: 2018-09-06 14:51:24
Local clock offset: 4.417 ms
Remote clock offset: 0.214 ms

# Below is generated by plot.py at 2018-09-06 16:04:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.22 Mbit/s
95th percentile per-packet one-way delay: 88.931 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 60.22 Mbit/s
95th percentile per-packet one-way delay: 88.931 ms
Loss rate: 0.80%
```

## Run 2: Report of QUIC Cubic — Data Link

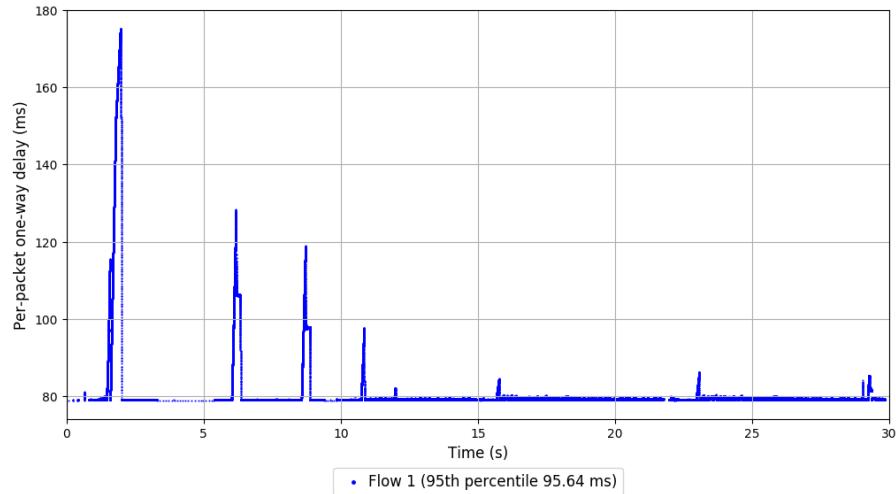
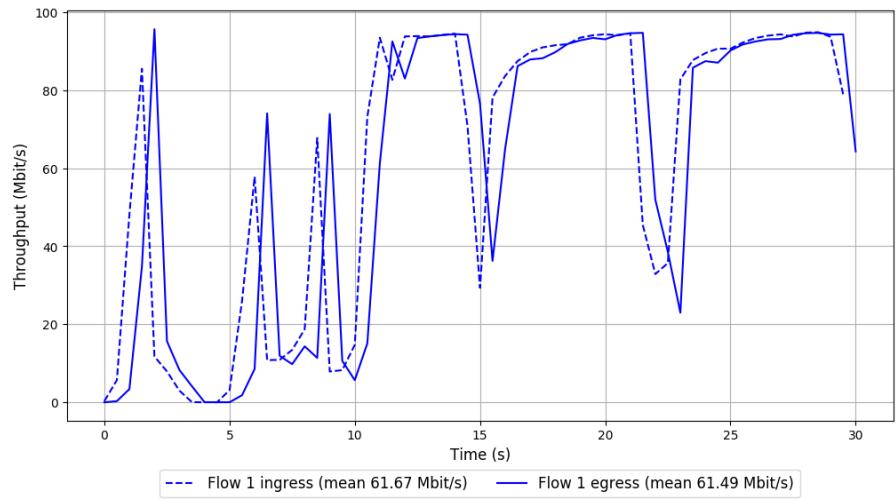


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-09-06 15:12:04
End at: 2018-09-06 15:12:34
Local clock offset: 3.91 ms
Remote clock offset: 0.604 ms

# Below is generated by plot.py at 2018-09-06 16:04:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.49 Mbit/s
95th percentile per-packet one-way delay: 95.642 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 61.49 Mbit/s
95th percentile per-packet one-way delay: 95.642 ms
Loss rate: 0.80%
```

### Run 3: Report of QUIC Cubic — Data Link

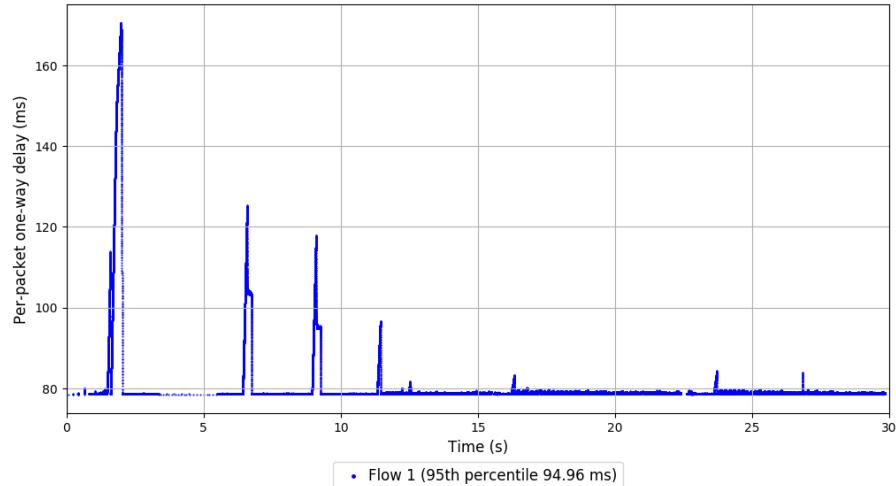
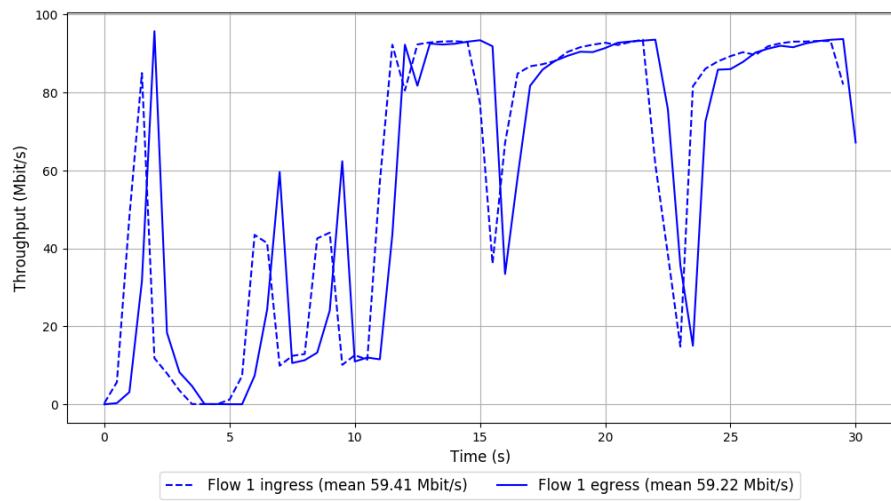


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-09-06 15:33:48
End at: 2018-09-06 15:34:18
Local clock offset: 3.72 ms
Remote clock offset: 1.003 ms

# Below is generated by plot.py at 2018-09-06 16:04:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.22 Mbit/s
95th percentile per-packet one-way delay: 94.964 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 59.22 Mbit/s
95th percentile per-packet one-way delay: 94.964 ms
Loss rate: 0.83%
```

## Run 4: Report of QUIC Cubic — Data Link

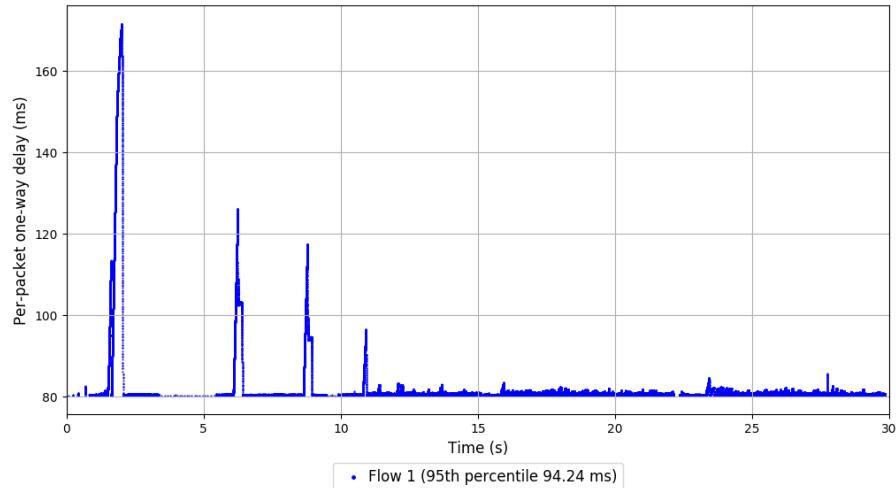
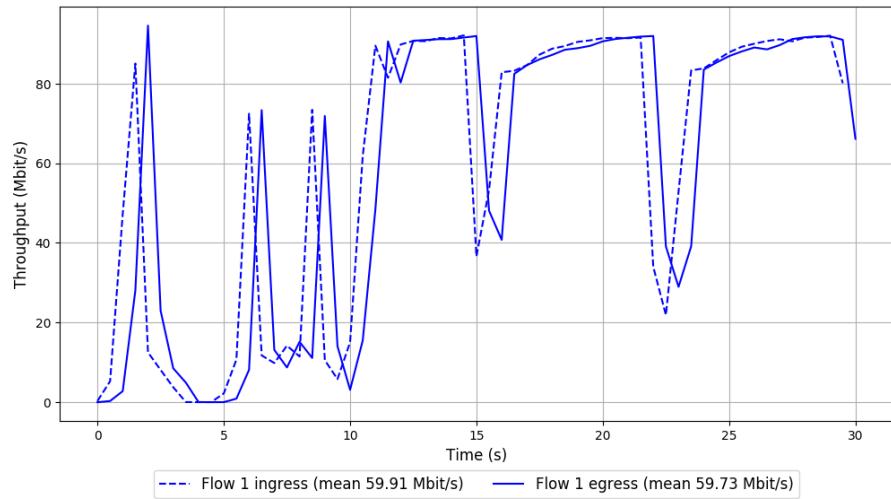


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-09-06 15:55:02
End at: 2018-09-06 15:55:32
Local clock offset: 5.812 ms
Remote clock offset: 2.094 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.73 Mbit/s
95th percentile per-packet one-way delay: 94.236 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 59.73 Mbit/s
95th percentile per-packet one-way delay: 94.236 ms
Loss rate: 0.82%
```

Run 5: Report of QUIC Cubic — Data Link

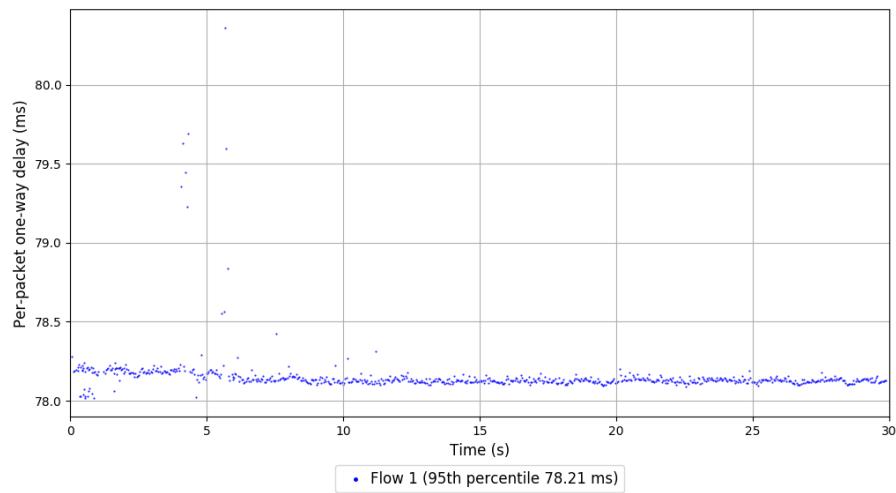
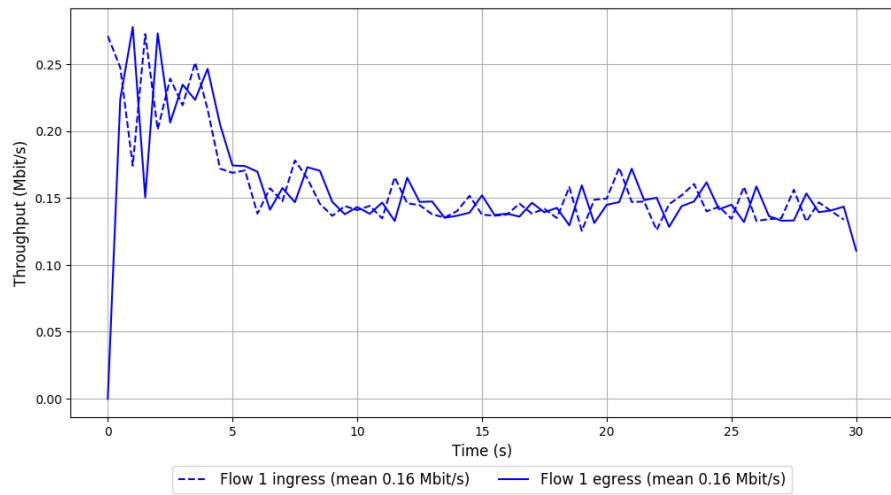


Run 1: Statistics of SCReAM

```
Start at: 2018-09-06 14:10:37
End at: 2018-09-06 14:11:07
Local clock offset: 4.581 ms
Remote clock offset: 0.614 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 78.206 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 78.206 ms
Loss rate: 0.66%
```

Run 1: Report of SCReAM — Data Link

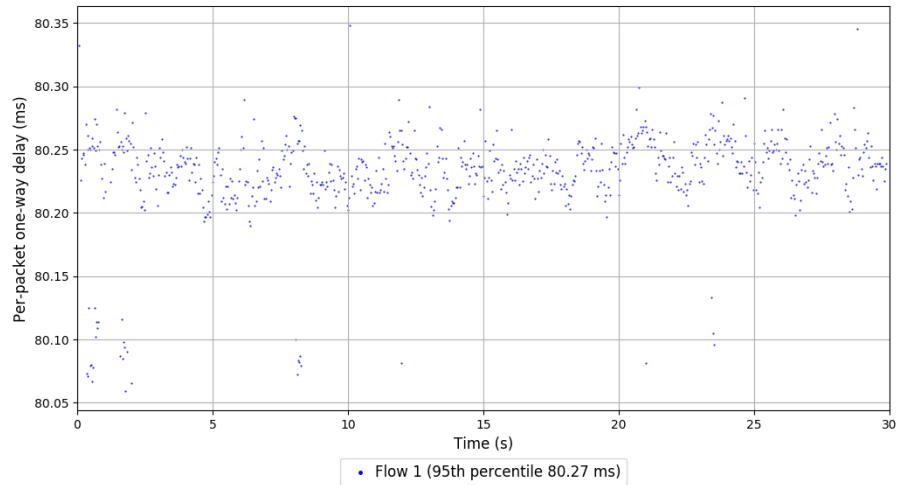
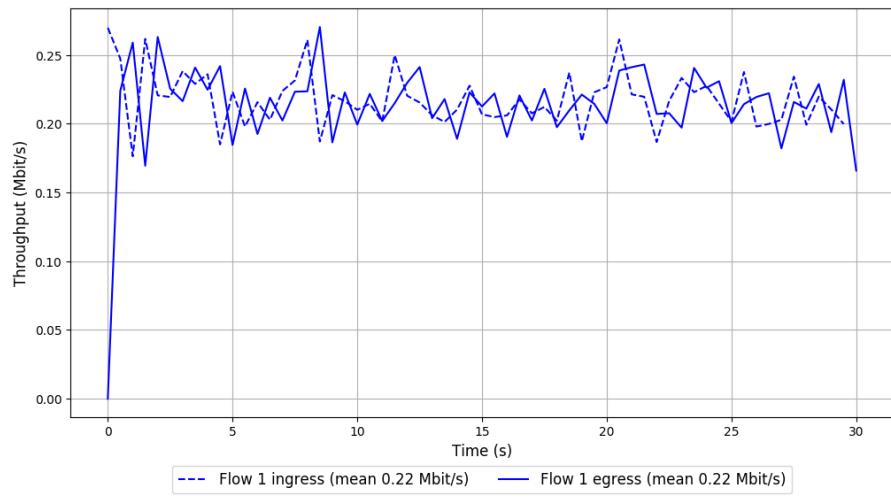


Run 2: Statistics of SCReAM

```
Start at: 2018-09-06 14:32:01
End at: 2018-09-06 14:32:31
Local clock offset: 4.513 ms
Remote clock offset: 1.143 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.266 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.266 ms
Loss rate: 0.51%
```

Run 2: Report of SCReAM — Data Link

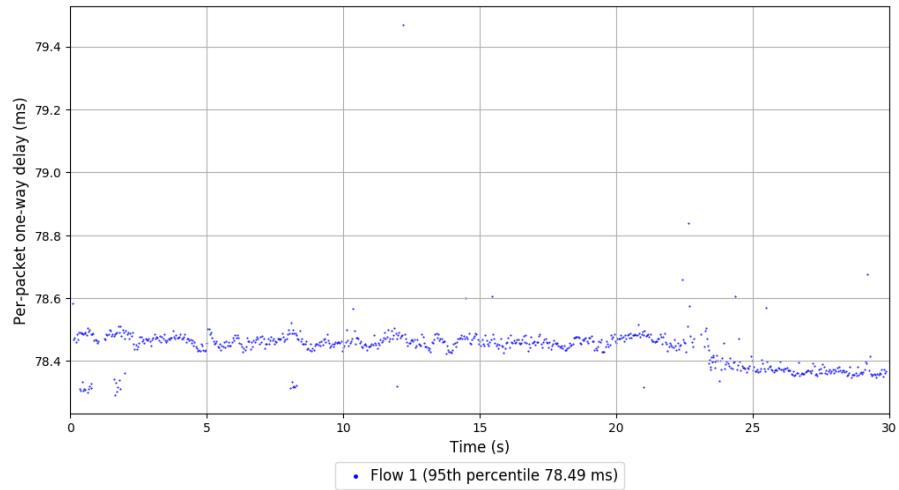
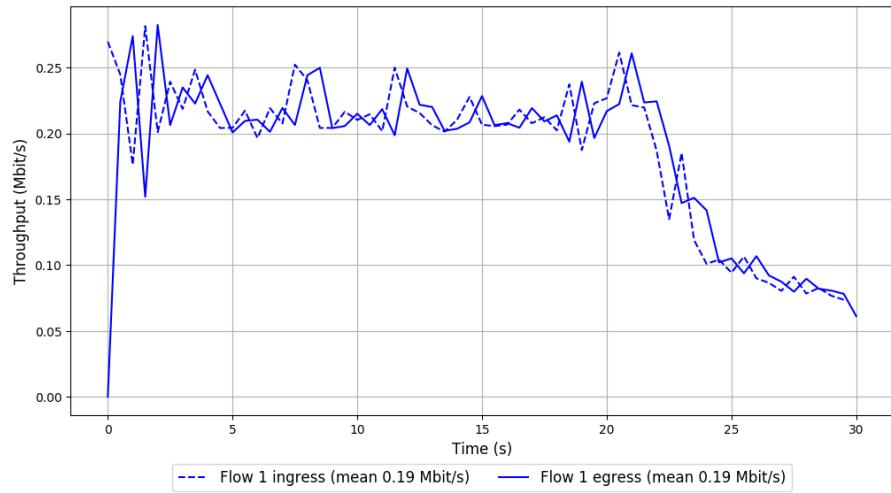


Run 3: Statistics of SCReAM

```
Start at: 2018-09-06 14:53:16
End at: 2018-09-06 14:53:46
Local clock offset: 3.745 ms
Remote clock offset: 0.411 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 78.492 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 78.492 ms
Loss rate: 0.31%
```

Run 3: Report of SCReAM — Data Link

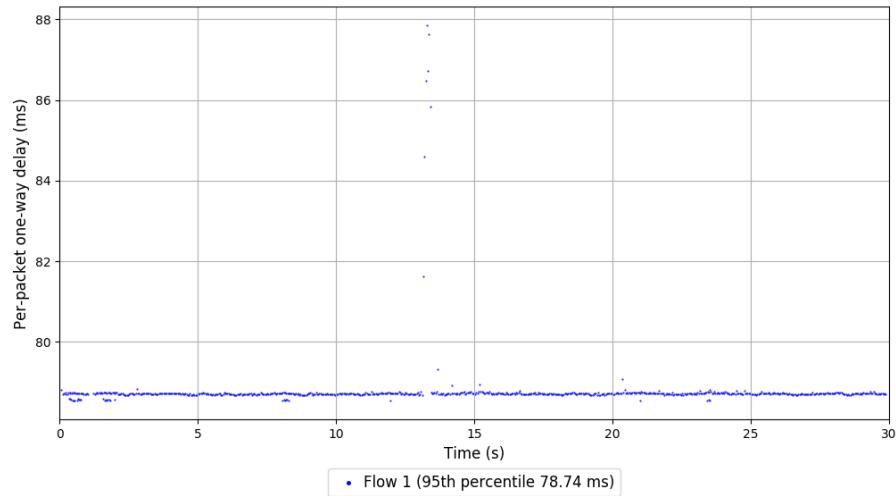
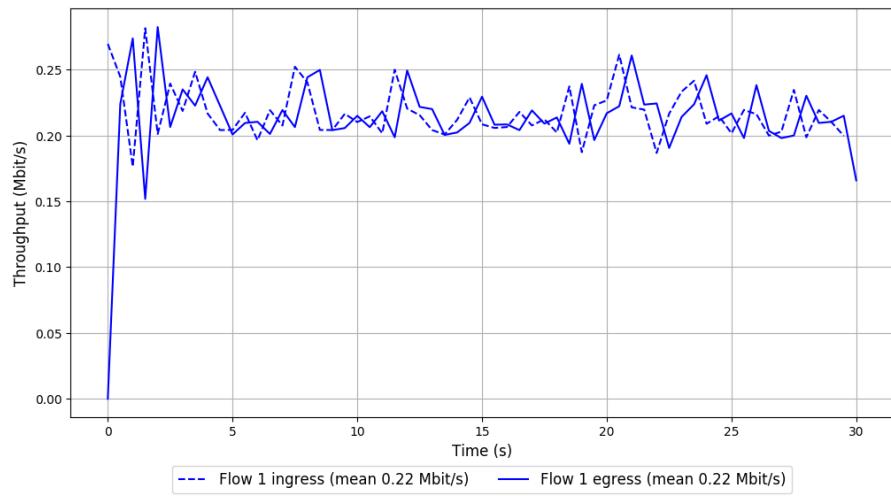


Run 4: Statistics of SCReAM

```
Start at: 2018-09-06 15:14:27
End at: 2018-09-06 15:14:57
Local clock offset: 3.916 ms
Remote clock offset: 0.509 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 78.740 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 78.740 ms
Loss rate: 0.51%
```

Run 4: Report of SCReAM — Data Link

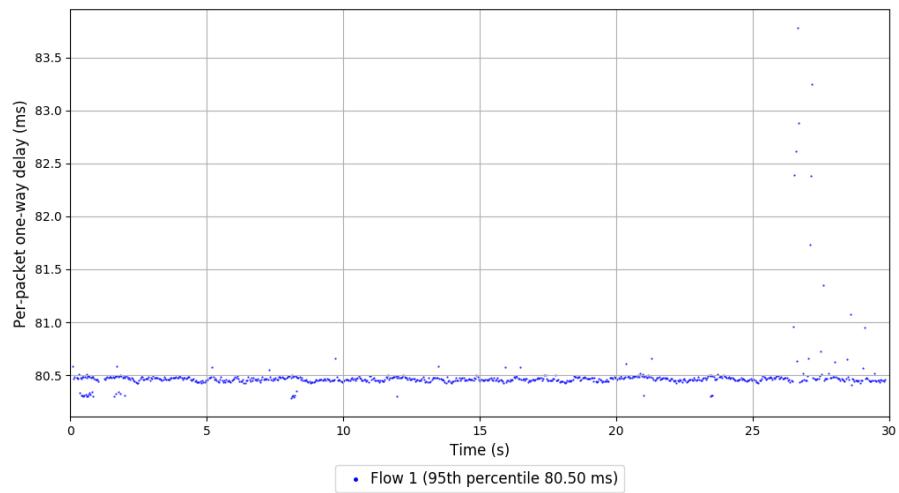
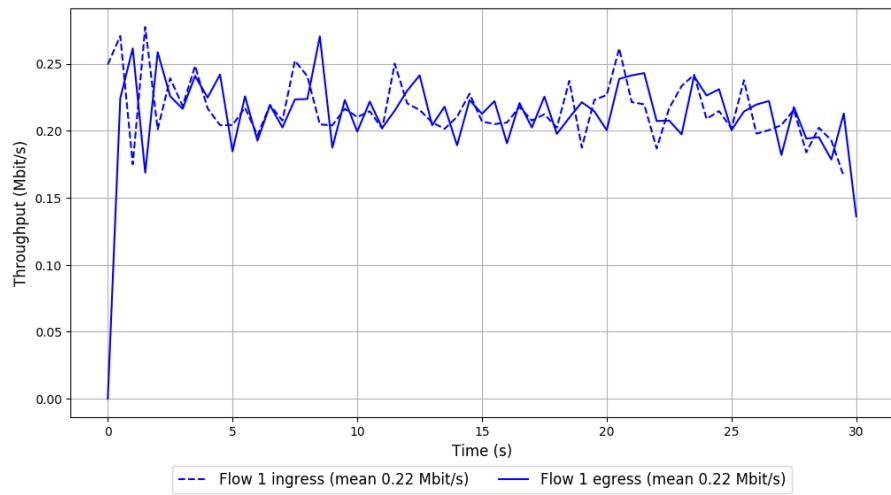


Run 5: Statistics of SCReAM

```
Start at: 2018-09-06 15:36:12
End at: 2018-09-06 15:36:42
Local clock offset: 4.48 ms
Remote clock offset: 2.249 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.499 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.499 ms
Loss rate: 0.61%
```

Run 5: Report of SCReAM — Data Link



Run 1: Statistics of Sprout

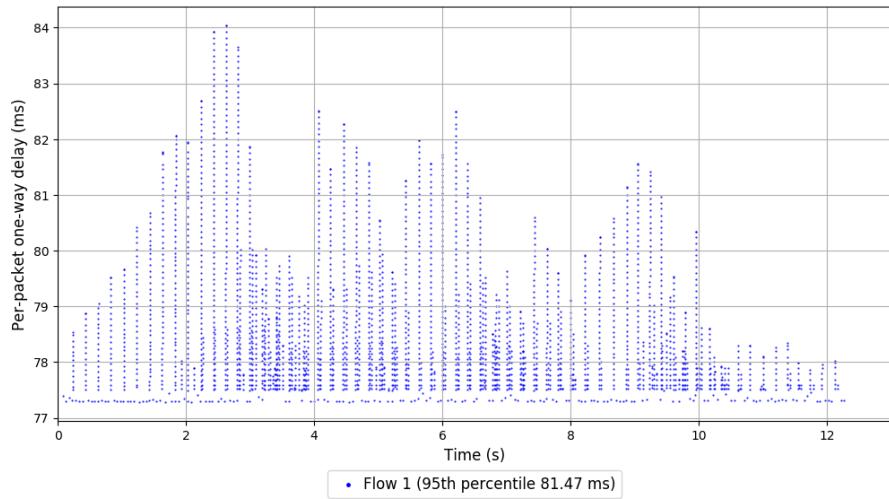
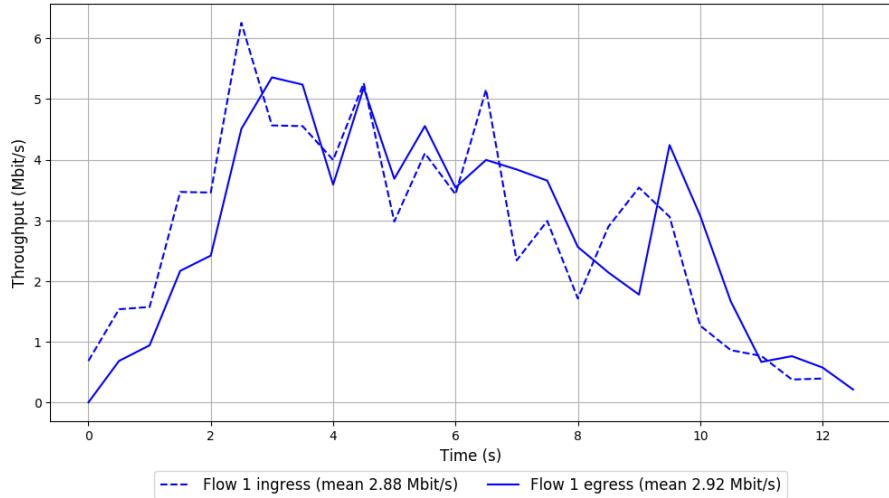
Start at: 2018-09-06 14:26:06

End at: 2018-09-06 14:26:36

Local clock offset: 3.89 ms

Remote clock offset: 0.893 ms

## Run 1: Report of Sprout — Data Link

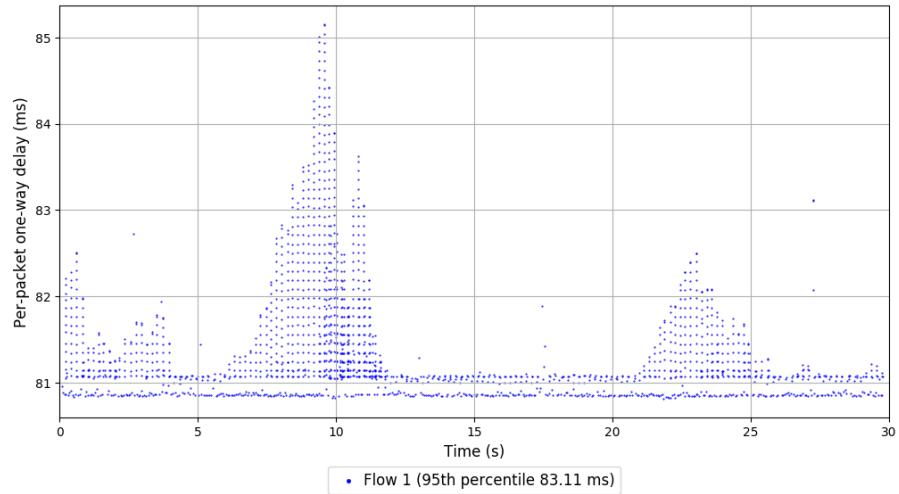
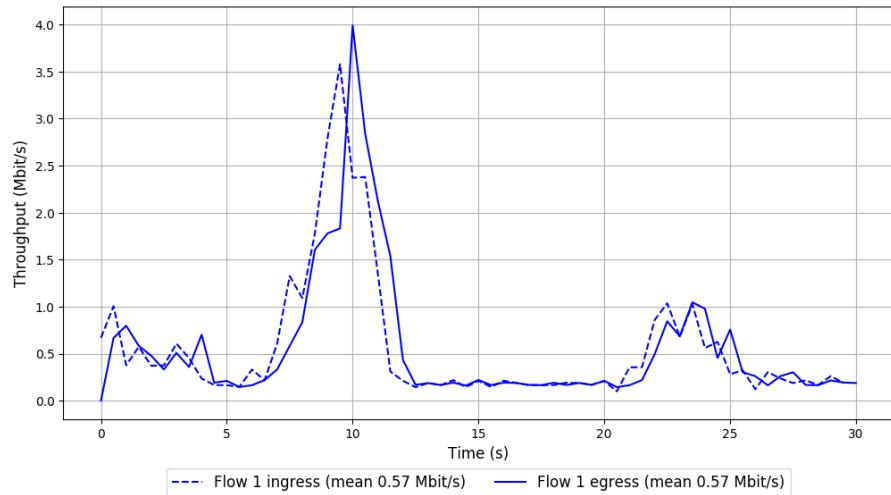


Run 2: Statistics of Sprout

```
Start at: 2018-09-06 14:47:21
End at: 2018-09-06 14:47:51
Local clock offset: 4.428 ms
Remote clock offset: 1.448 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 83.113 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 83.113 ms
Loss rate: 0.27%
```

## Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

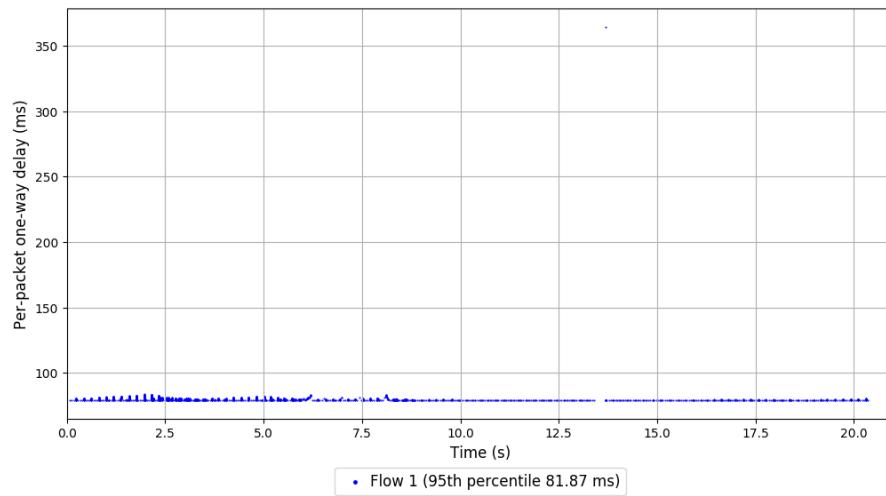
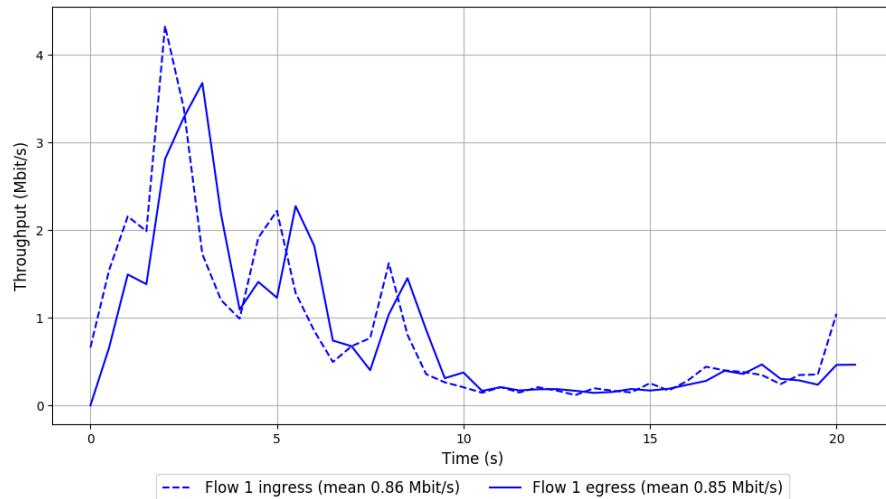
Start at: 2018-09-06 15:08:33

End at: 2018-09-06 15:09:03

Local clock offset: 4.6 ms

Remote clock offset: 0.596 ms

### Run 3: Report of Sprout — Data Link

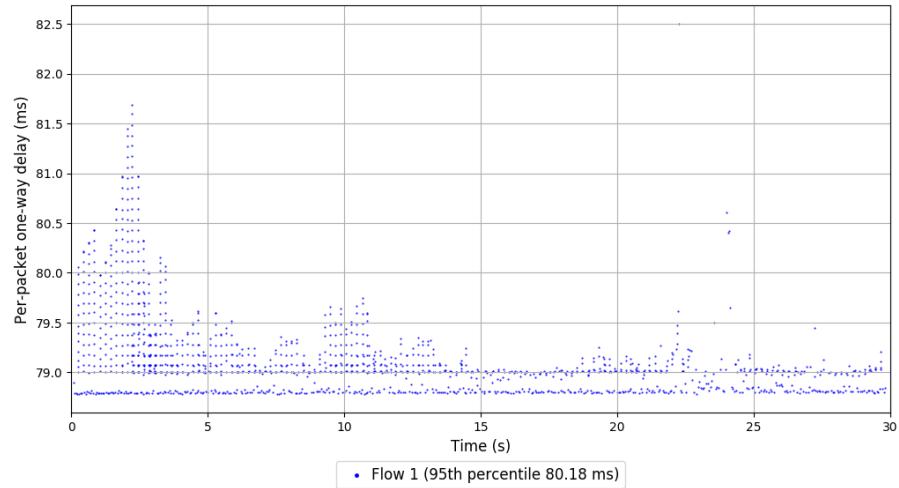
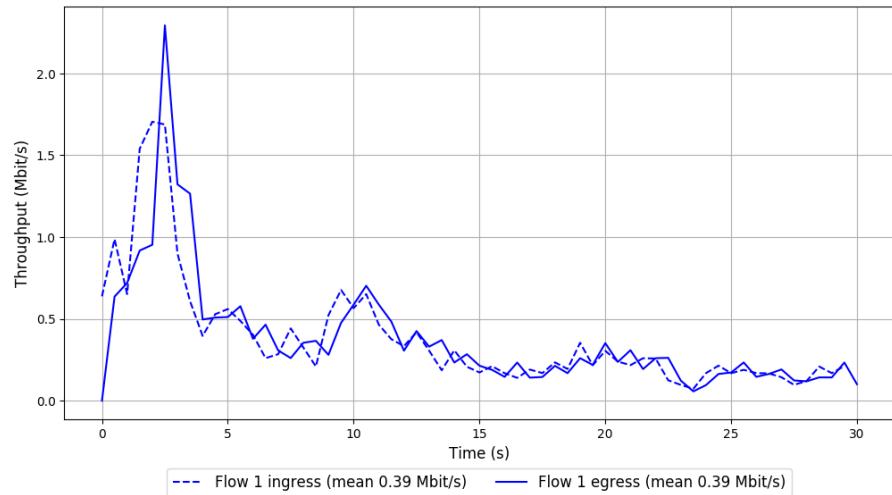


Run 4: Statistics of Sprout

```
Start at: 2018-09-06 15:30:17
End at: 2018-09-06 15:30:47
Local clock offset: 4.426 ms
Remote clock offset: 0.963 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 80.180 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 80.180 ms
Loss rate: 0.57%
```

Run 4: Report of Sprout — Data Link

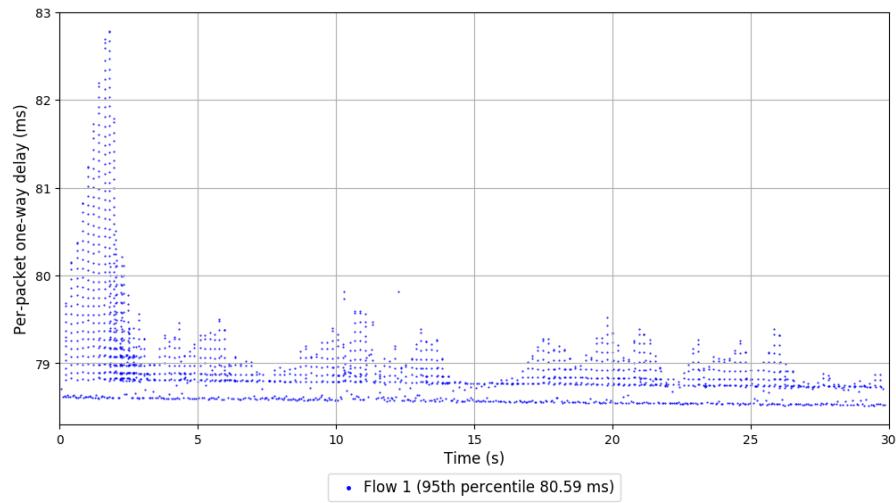
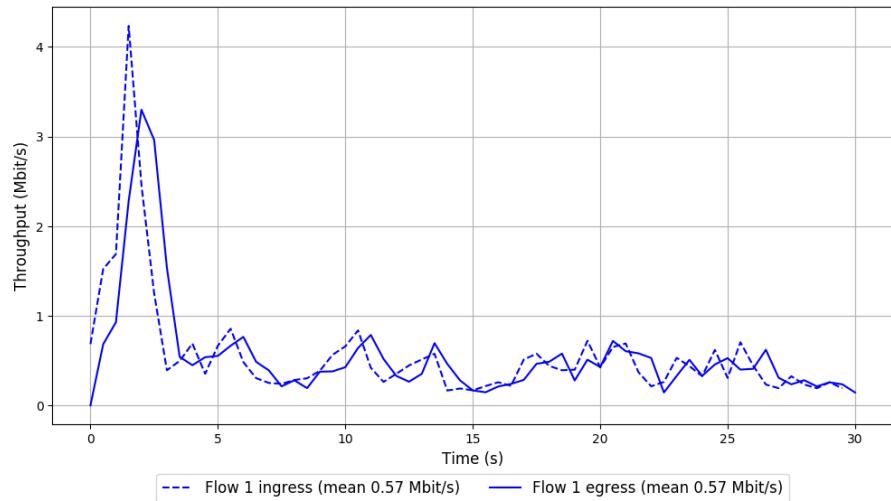


Run 5: Statistics of Sprout

```
Start at: 2018-09-06 15:51:31
End at: 2018-09-06 15:52:01
Local clock offset: 5.96 ms
Remote clock offset: 2.229 ms

# Below is generated by plot.py at 2018-09-06 16:05:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 80.594 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 80.594 ms
Loss rate: 0.41%
```

## Run 5: Report of Sprout — Data Link

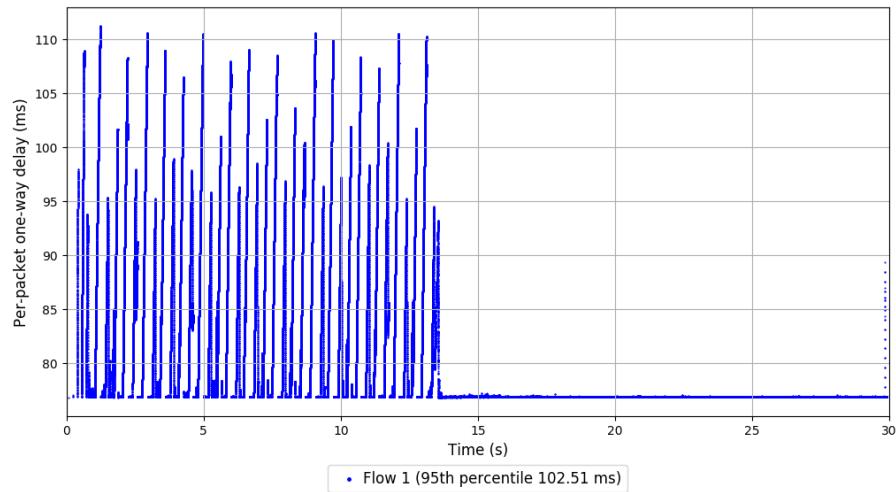
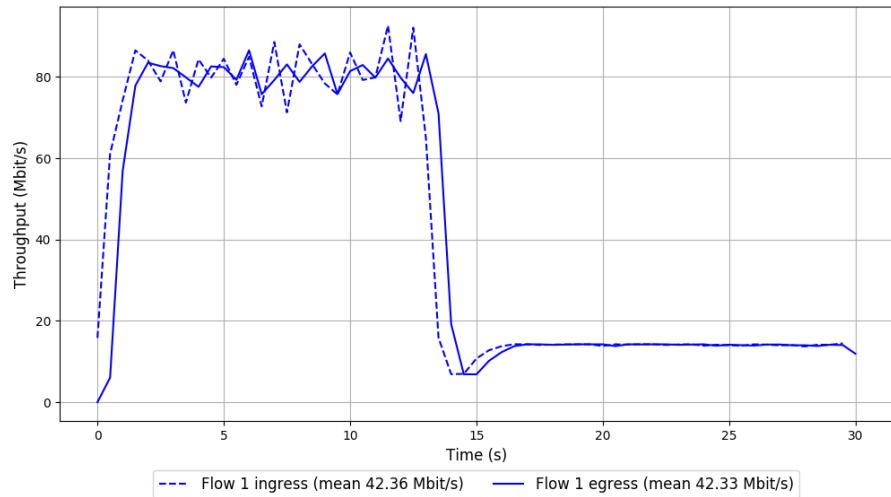


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-09-06 14:28:26
End at: 2018-09-06 14:28:56
Local clock offset: 3.834 ms
Remote clock offset: 1.948 ms

# Below is generated by plot.py at 2018-09-06 16:05:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.33 Mbit/s
95th percentile per-packet one-way delay: 102.514 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 42.33 Mbit/s
95th percentile per-packet one-way delay: 102.514 ms
Loss rate: 0.59%
```

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

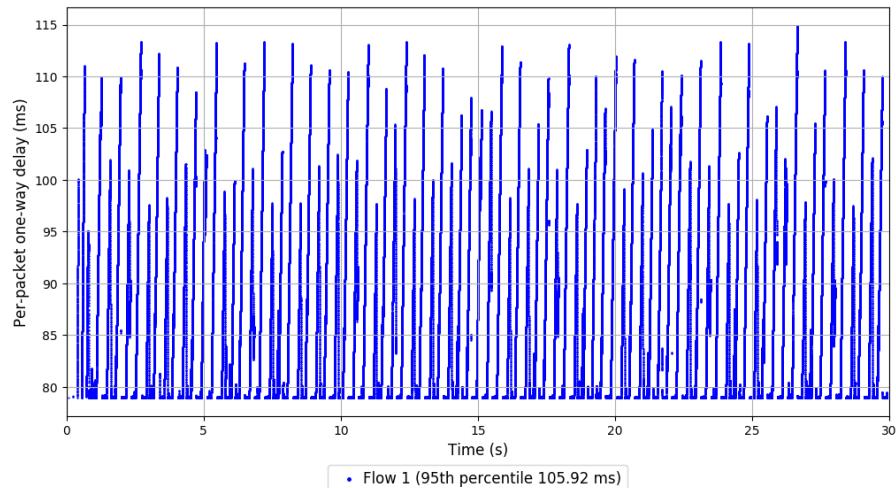
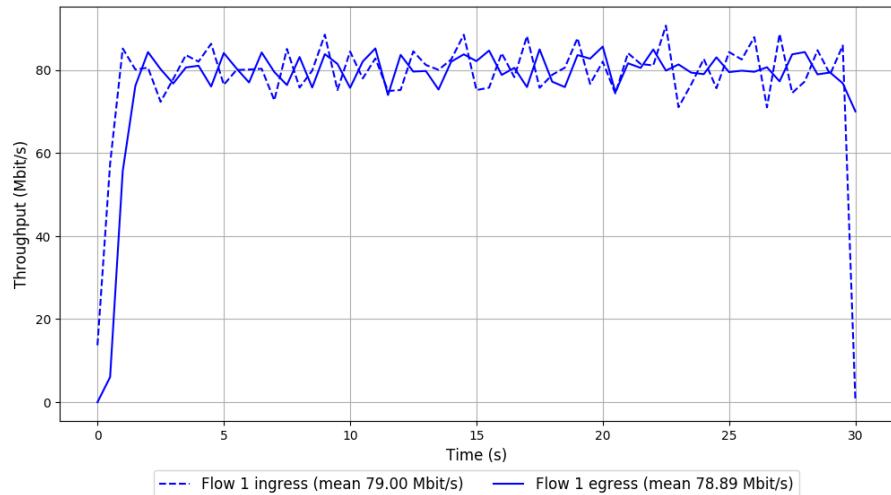


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-09-06 14:49:40
End at: 2018-09-06 14:50:10
Local clock offset: 3.707 ms
Remote clock offset: 2.506 ms

# Below is generated by plot.py at 2018-09-06 16:06:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.89 Mbit/s
95th percentile per-packet one-way delay: 105.917 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 78.89 Mbit/s
95th percentile per-packet one-way delay: 105.917 ms
Loss rate: 0.66%
```

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

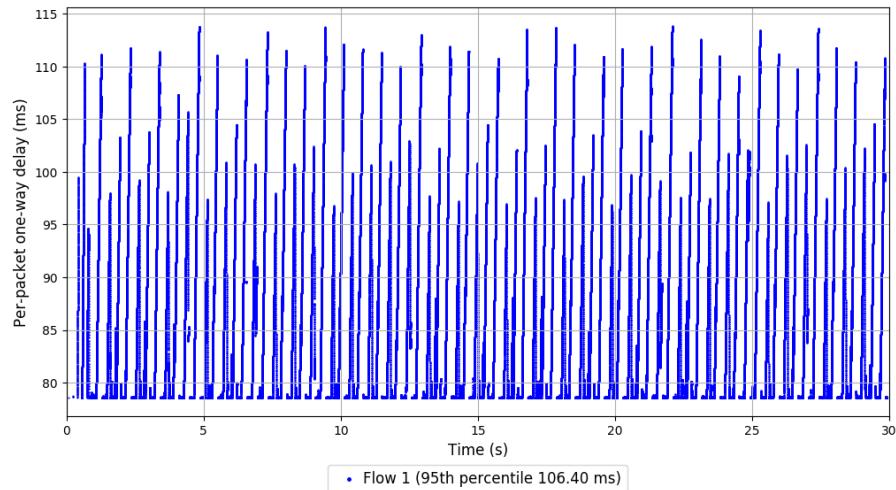
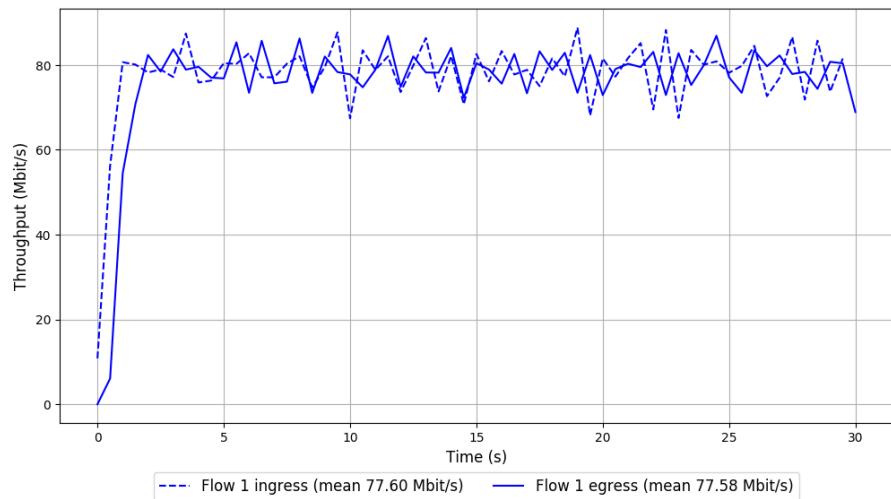


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-09-06 15:10:51
End at: 2018-09-06 15:11:21
Local clock offset: 4.668 ms
Remote clock offset: 1.641 ms

# Below is generated by plot.py at 2018-09-06 16:06:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.58 Mbit/s
95th percentile per-packet one-way delay: 106.400 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 77.58 Mbit/s
95th percentile per-packet one-way delay: 106.400 ms
Loss rate: 0.54%
```

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

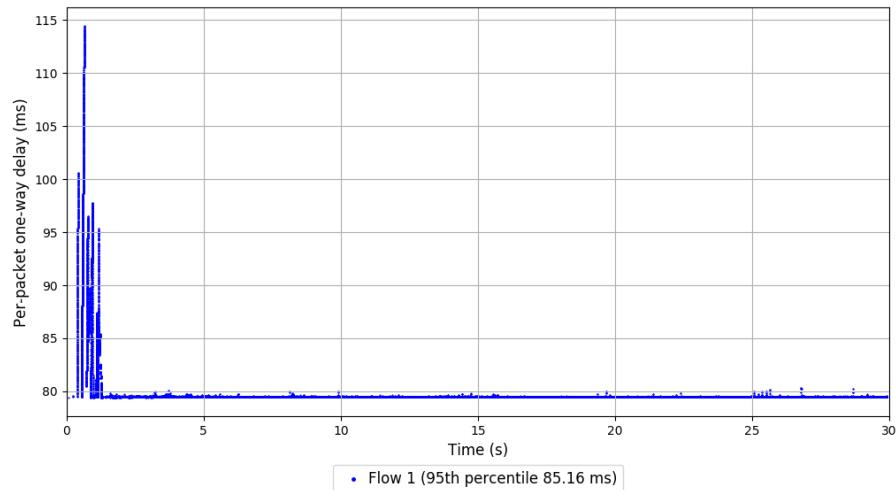
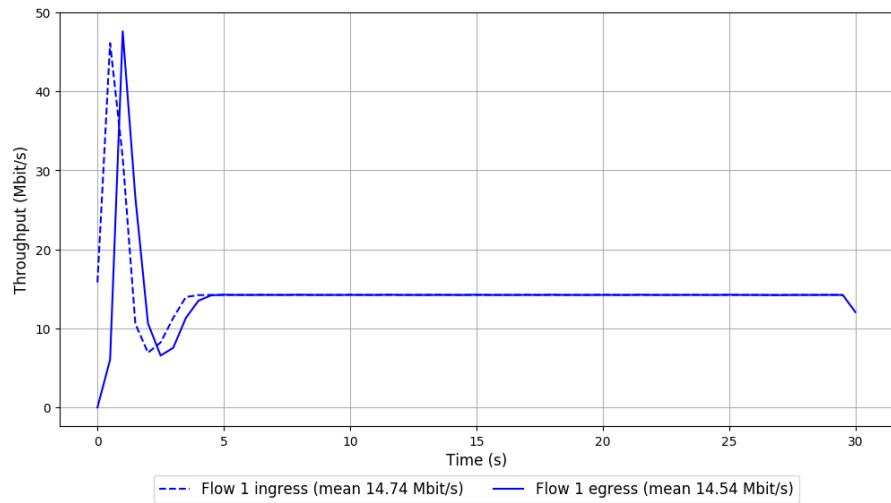


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-09-06 15:32:39
End at: 2018-09-06 15:33:09
Local clock offset: 4.476 ms
Remote clock offset: 1.015 ms

# Below is generated by plot.py at 2018-09-06 16:06:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.54 Mbit/s
95th percentile per-packet one-way delay: 85.157 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 14.54 Mbit/s
95th percentile per-packet one-way delay: 85.157 ms
Loss rate: 1.91%
```

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

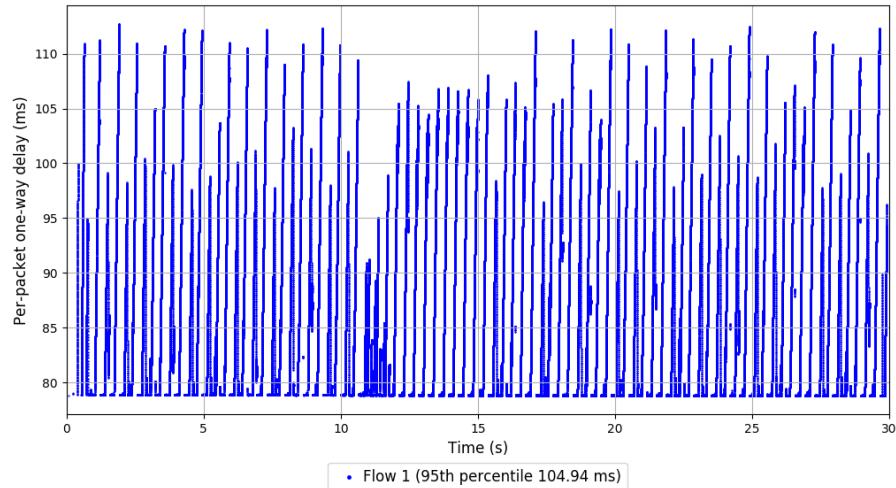
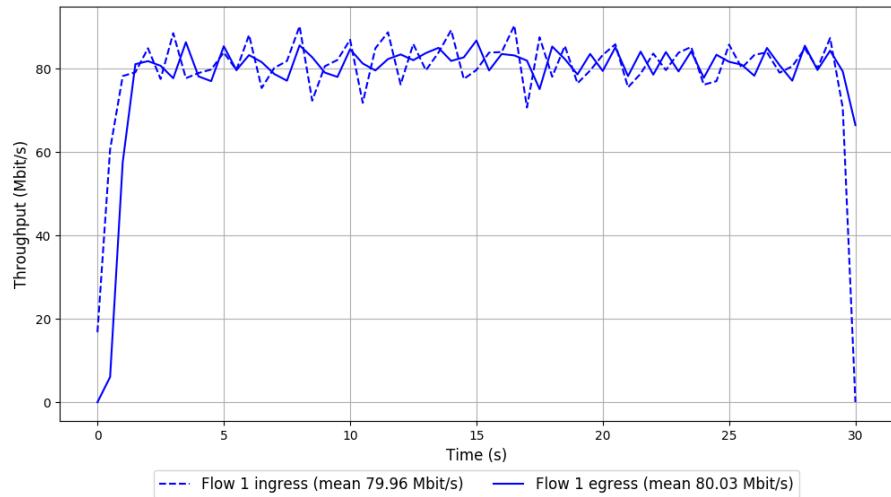


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-09-06 15:53:49
End at: 2018-09-06 15:54:19
Local clock offset: 5.59 ms
Remote clock offset: 1.073 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.03 Mbit/s
95th percentile per-packet one-way delay: 104.935 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 80.03 Mbit/s
95th percentile per-packet one-way delay: 104.935 ms
Loss rate: 0.51%
```

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

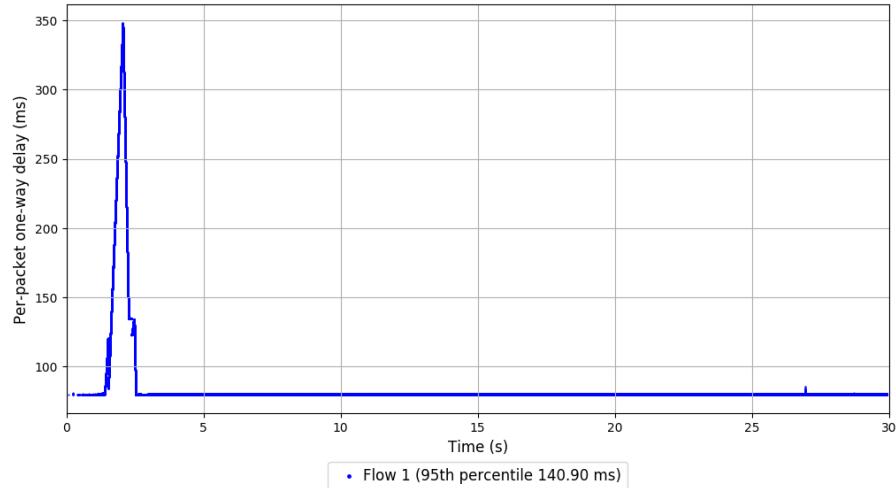
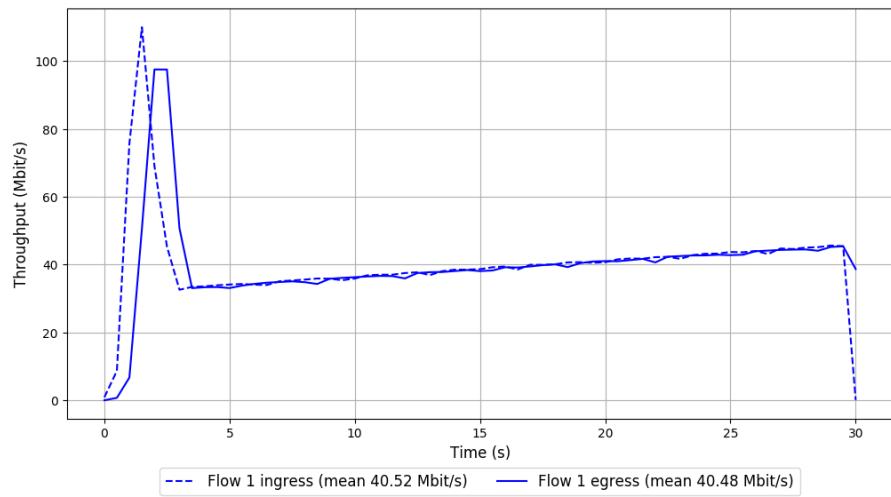


Run 1: Statistics of TCP Vegas

```
Start at: 2018-09-06 14:14:08
End at: 2018-09-06 14:14:38
Local clock offset: 4.628 ms
Remote clock offset: 0.641 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.48 Mbit/s
95th percentile per-packet one-way delay: 140.903 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 40.48 Mbit/s
95th percentile per-packet one-way delay: 140.903 ms
Loss rate: 0.62%
```

Run 1: Report of TCP Vegas — Data Link

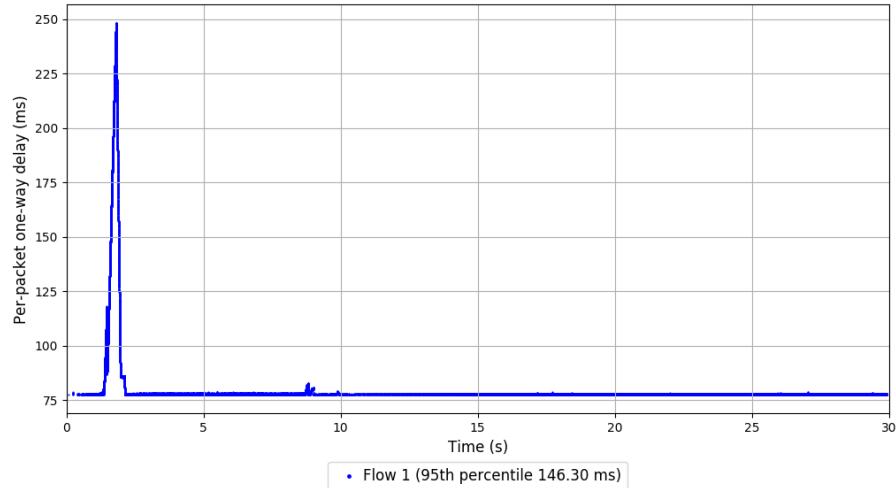
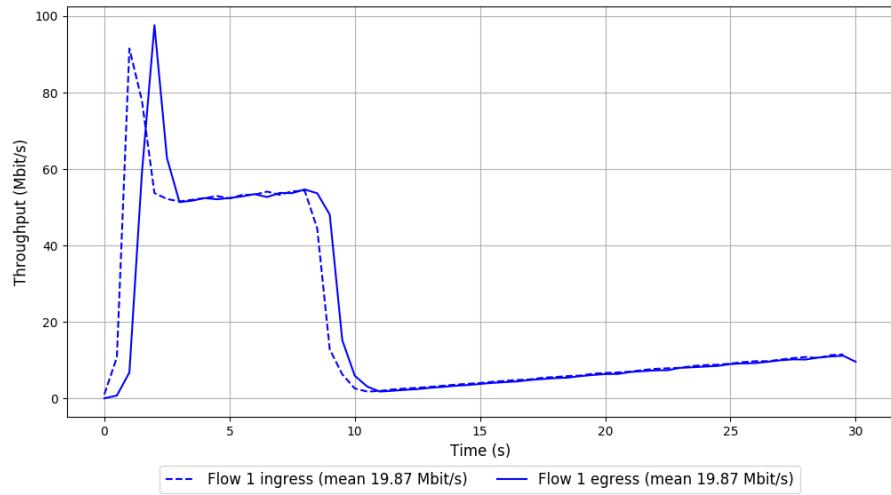


Run 2: Statistics of TCP Vegas

```
Start at: 2018-09-06 14:35:31
End at: 2018-09-06 14:36:01
Local clock offset: 3.694 ms
Remote clock offset: 1.207 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 19.87 Mbit/s
95th percentile per-packet one-way delay: 146.304 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 19.87 Mbit/s
95th percentile per-packet one-way delay: 146.304 ms
Loss rate: 0.51%
```

## Run 2: Report of TCP Vegas — Data Link

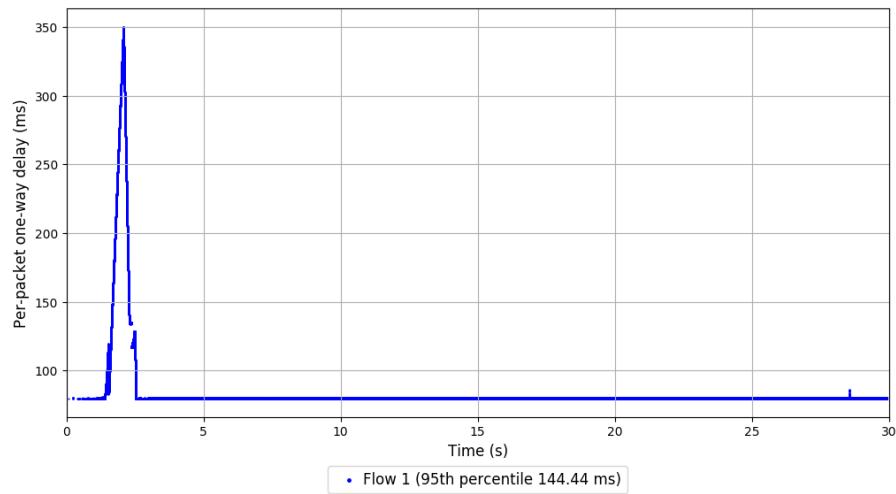
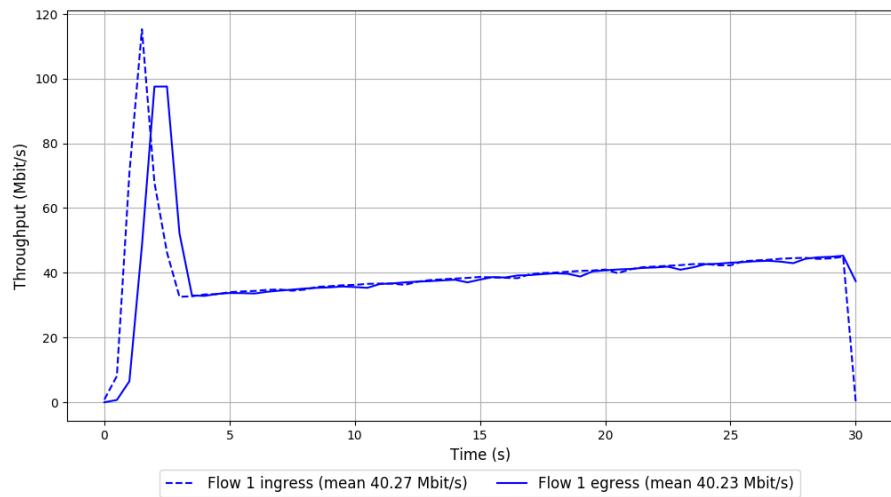


Run 3: Statistics of TCP Vegas

```
Start at: 2018-09-06 14:56:45
End at: 2018-09-06 14:57:15
Local clock offset: 4.572 ms
Remote clock offset: 2.569 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.23 Mbit/s
95th percentile per-packet one-way delay: 144.435 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 40.23 Mbit/s
95th percentile per-packet one-way delay: 144.435 ms
Loss rate: 0.62%
```

### Run 3: Report of TCP Vegas — Data Link

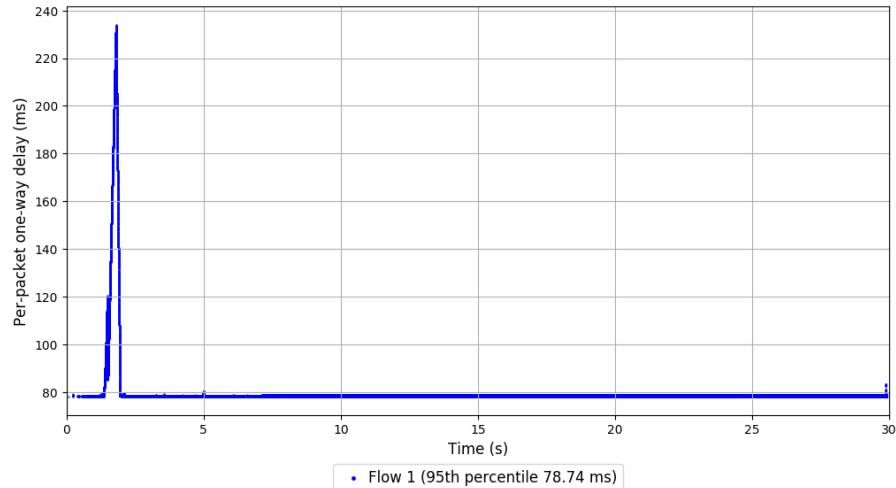
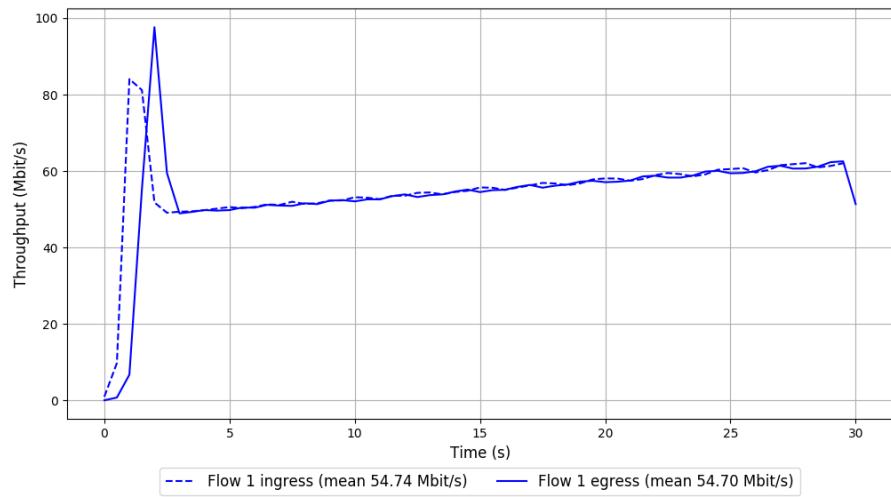


Run 4: Statistics of TCP Vegas

```
Start at: 2018-09-06 15:18:02
End at: 2018-09-06 15:18:32
Local clock offset: 4.621 ms
Remote clock offset: 1.807 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.70 Mbit/s
95th percentile per-packet one-way delay: 78.742 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 54.70 Mbit/s
95th percentile per-packet one-way delay: 78.742 ms
Loss rate: 0.59%
```

### Run 4: Report of TCP Vegas — Data Link

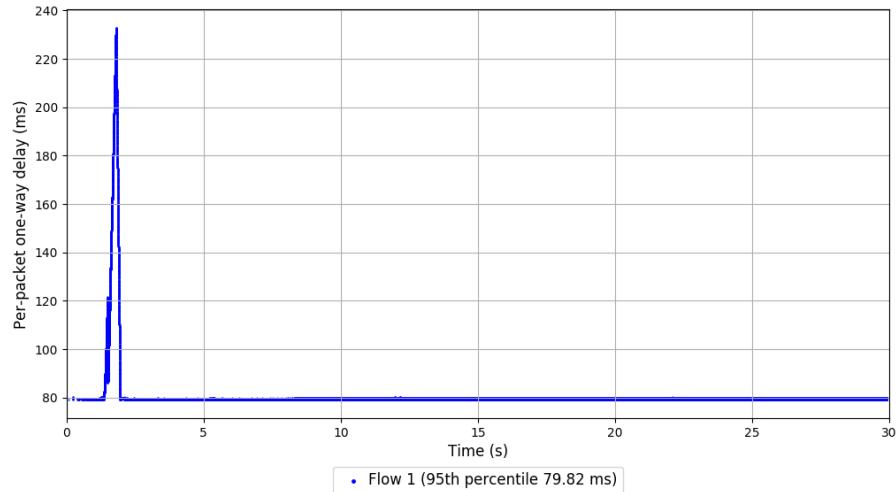
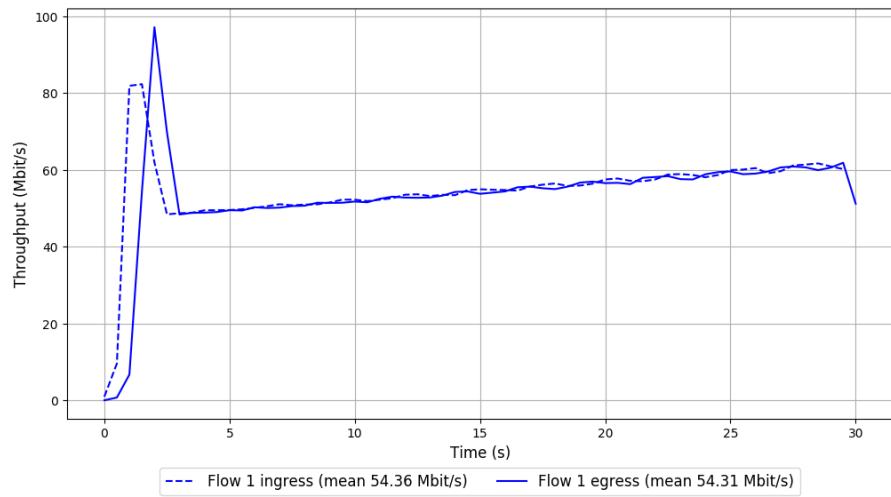


Run 5: Statistics of TCP Vegas

```
Start at: 2018-09-06 15:39:42
End at: 2018-09-06 15:40:12
Local clock offset: 4.394 ms
Remote clock offset: 3.193 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.31 Mbit/s
95th percentile per-packet one-way delay: 79.818 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 54.31 Mbit/s
95th percentile per-packet one-way delay: 79.818 ms
Loss rate: 0.60%
```

### Run 5: Report of TCP Vegas — Data Link

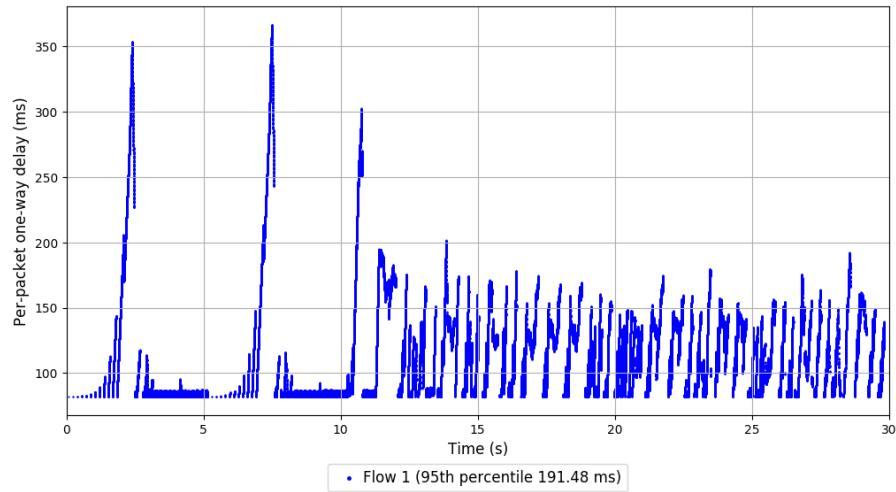
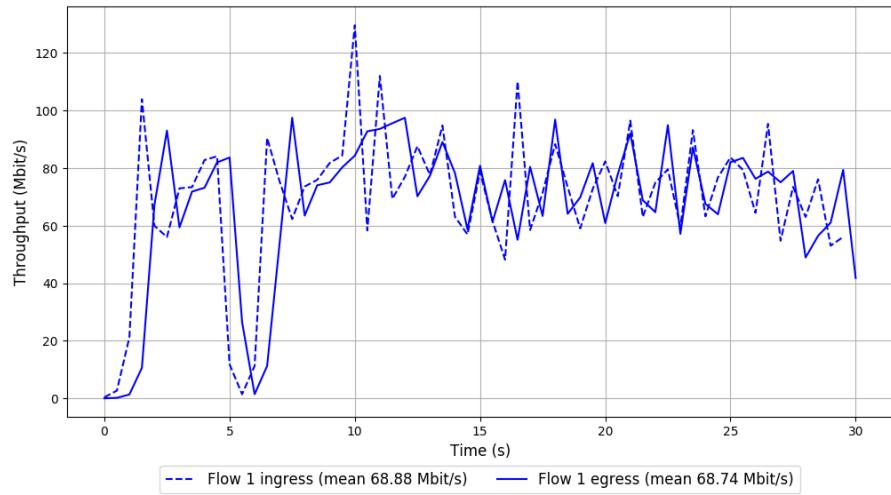


Run 1: Statistics of Verus

```
Start at: 2018-09-06 14:27:13
End at: 2018-09-06 14:27:43
Local clock offset: 4.572 ms
Remote clock offset: -0.165 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.74 Mbit/s
95th percentile per-packet one-way delay: 191.484 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 68.74 Mbit/s
95th percentile per-packet one-way delay: 191.484 ms
Loss rate: 1.03%
```

Run 1: Report of Verus — Data Link

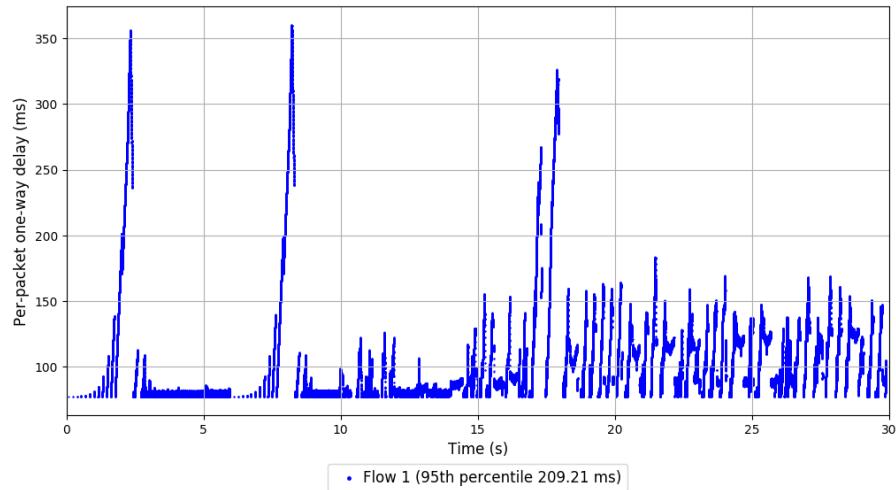
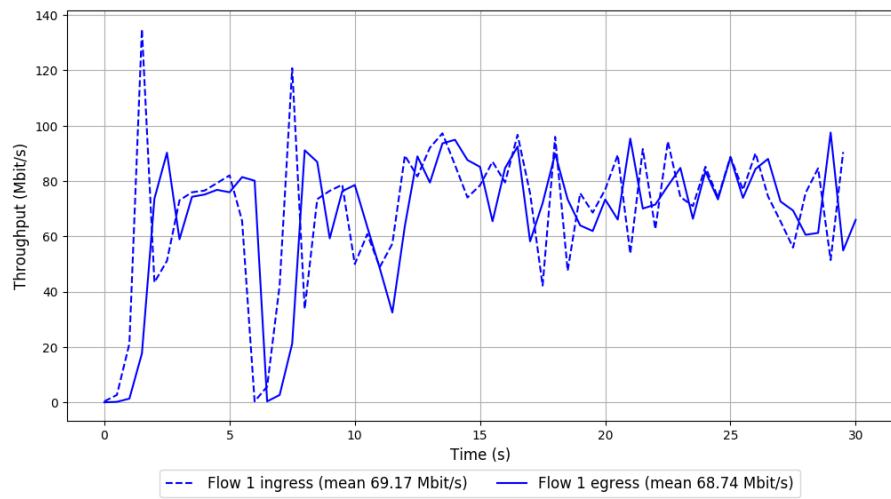


Run 2: Statistics of Verus

```
Start at: 2018-09-06 14:48:29
End at: 2018-09-06 14:48:59
Local clock offset: 4.45 ms
Remote clock offset: 2.591 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.74 Mbit/s
95th percentile per-packet one-way delay: 209.208 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 68.74 Mbit/s
95th percentile per-packet one-way delay: 209.208 ms
Loss rate: 1.14%
```

## Run 2: Report of Verus — Data Link

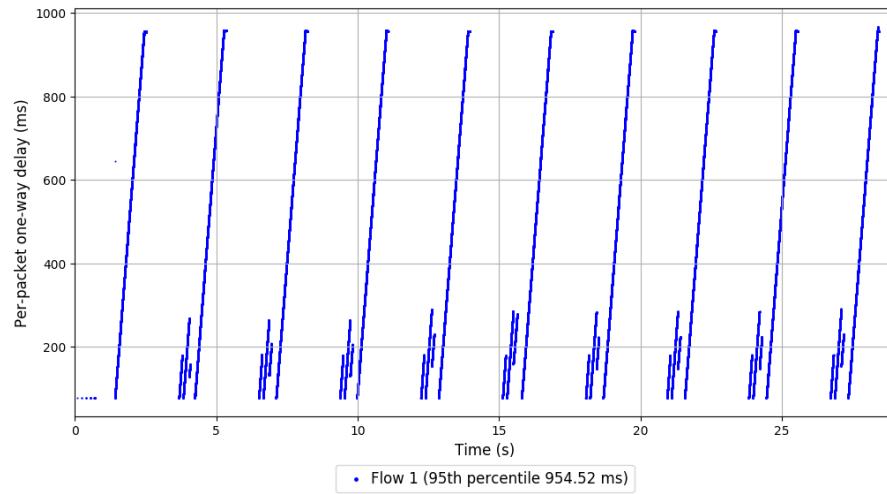
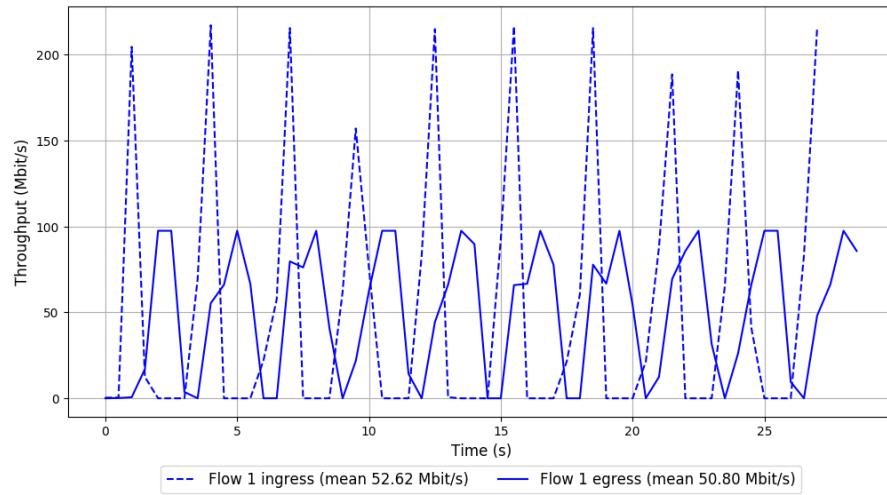


Run 3: Statistics of Verus

```
Start at: 2018-09-06 15:09:40
End at: 2018-09-06 15:10:10
Local clock offset: 3.838 ms
Remote clock offset: 1.579 ms

# Below is generated by plot.py at 2018-09-06 16:06:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.80 Mbit/s
95th percentile per-packet one-way delay: 954.522 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 50.80 Mbit/s
95th percentile per-packet one-way delay: 954.522 ms
Loss rate: 0.36%
```

### Run 3: Report of Verus — Data Link

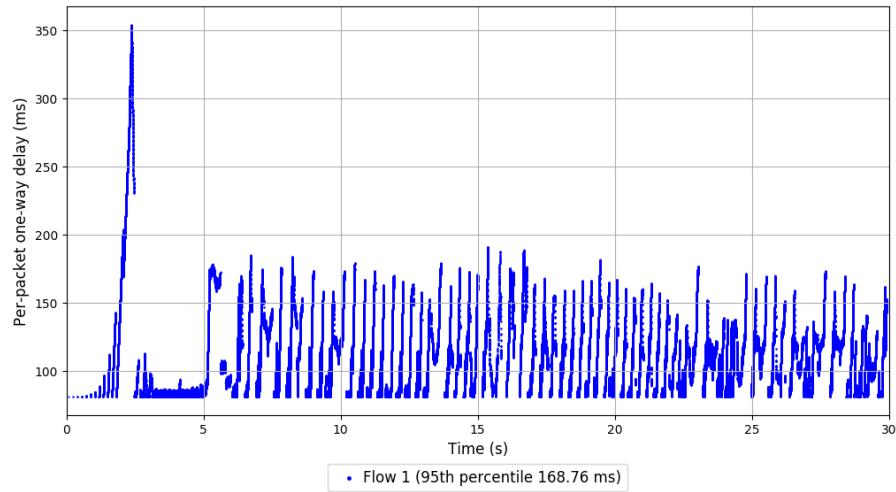
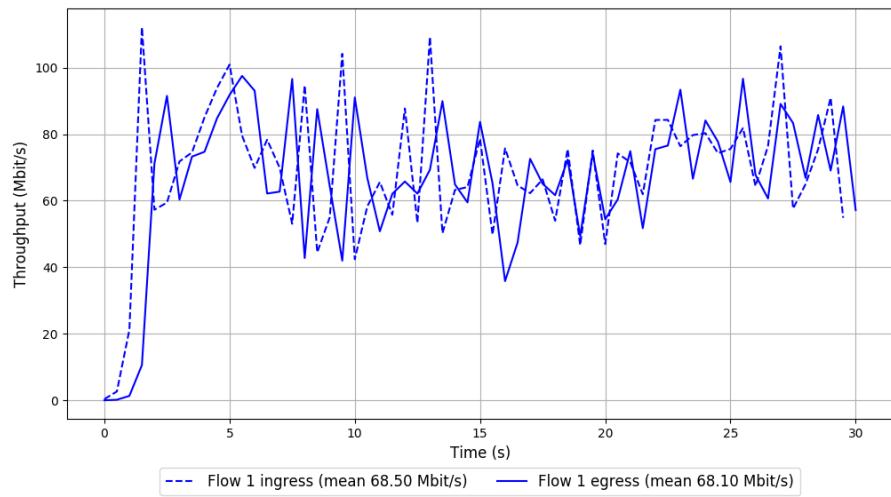


Run 4: Statistics of Verus

```
Start at: 2018-09-06 15:31:24
End at: 2018-09-06 15:31:54
Local clock offset: 3.726 ms
Remote clock offset: 0.899 ms

# Below is generated by plot.py at 2018-09-06 16:06:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.10 Mbit/s
95th percentile per-packet one-way delay: 168.758 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 68.10 Mbit/s
95th percentile per-packet one-way delay: 168.758 ms
Loss rate: 1.11%
```

Run 4: Report of Verus — Data Link

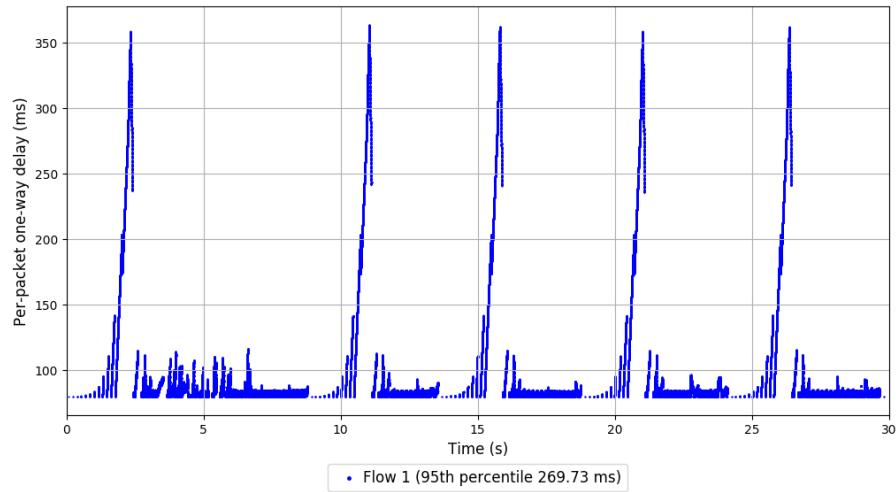
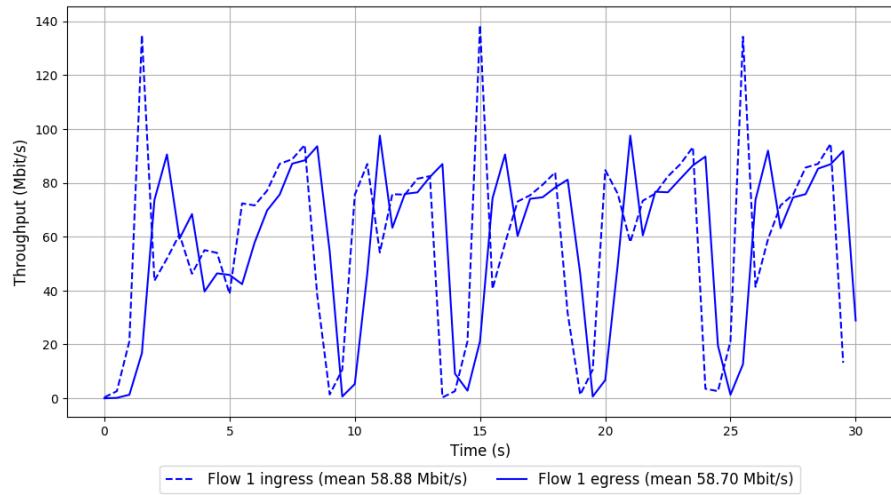


Run 5: Statistics of Verus

```
Start at: 2018-09-06 15:52:38
End at: 2018-09-06 15:53:08
Local clock offset: 6.241 ms
Remote clock offset: 3.244 ms

# Below is generated by plot.py at 2018-09-06 16:06:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.70 Mbit/s
95th percentile per-packet one-way delay: 269.726 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 58.70 Mbit/s
95th percentile per-packet one-way delay: 269.726 ms
Loss rate: 0.83%
```

### Run 5: Report of Verus — Data Link

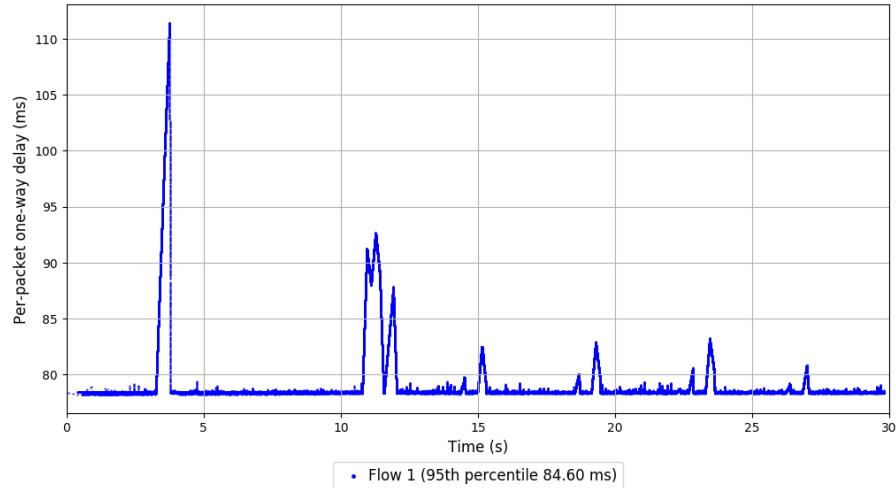
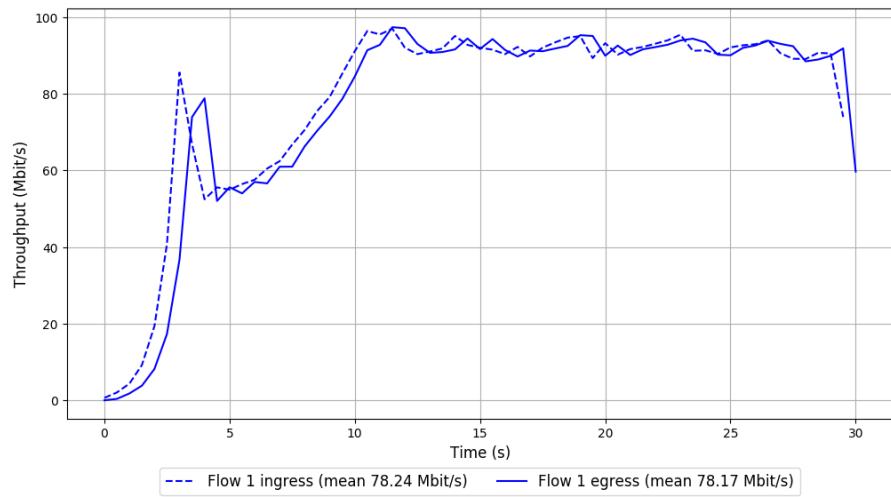


Run 1: Statistics of PCC-Vivace

```
Start at: 2018-09-06 14:11:44
End at: 2018-09-06 14:12:14
Local clock offset: 5.368 ms
Remote clock offset: 0.615 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.17 Mbit/s
95th percentile per-packet one-way delay: 84.596 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 78.17 Mbit/s
95th percentile per-packet one-way delay: 84.596 ms
Loss rate: 0.61%
```

Run 1: Report of PCC-Vivace — Data Link

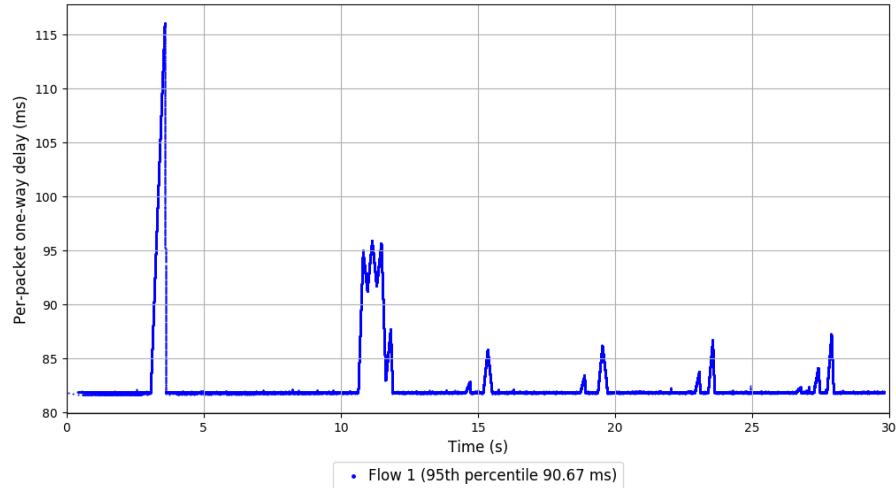
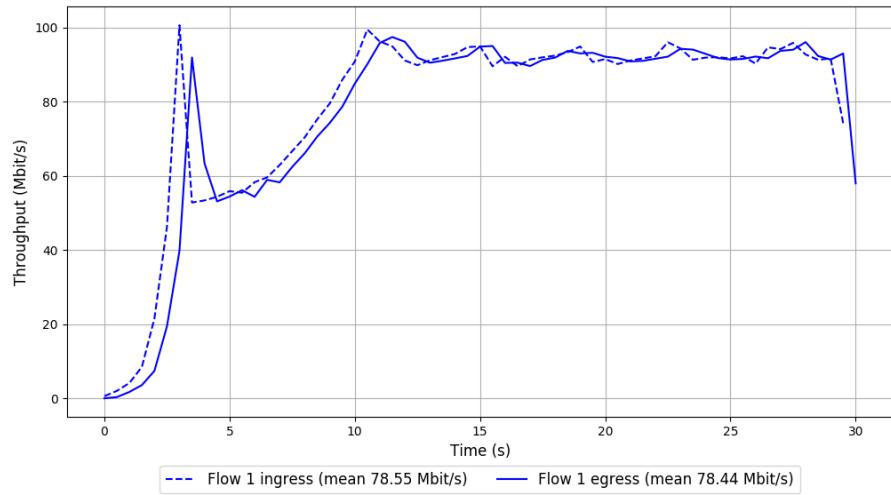


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-09-06 14:33:08
End at: 2018-09-06 14:33:38
Local clock offset: 4.494 ms
Remote clock offset: 0.037 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.44 Mbit/s
95th percentile per-packet one-way delay: 90.665 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 78.44 Mbit/s
95th percentile per-packet one-way delay: 90.665 ms
Loss rate: 0.67%
```

Run 2: Report of PCC-Vivace — Data Link

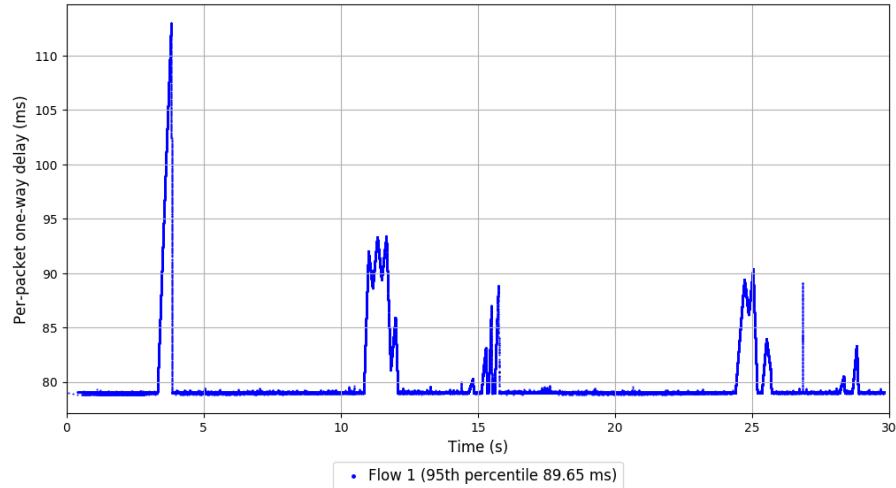
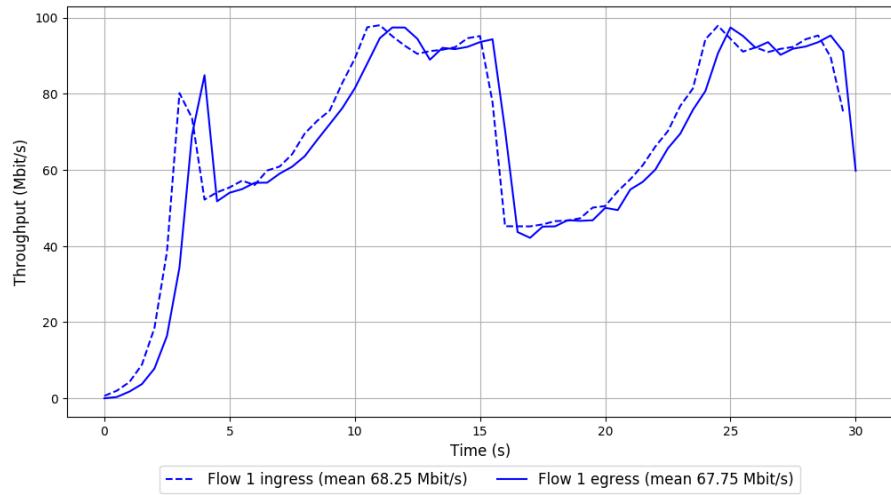


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-09-06 14:54:23
End at: 2018-09-06 14:54:53
Local clock offset: 4.547 ms
Remote clock offset: 1.316 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.75 Mbit/s
95th percentile per-packet one-way delay: 89.652 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 67.75 Mbit/s
95th percentile per-packet one-way delay: 89.652 ms
Loss rate: 1.25%
```

### Run 3: Report of PCC-Vivace — Data Link

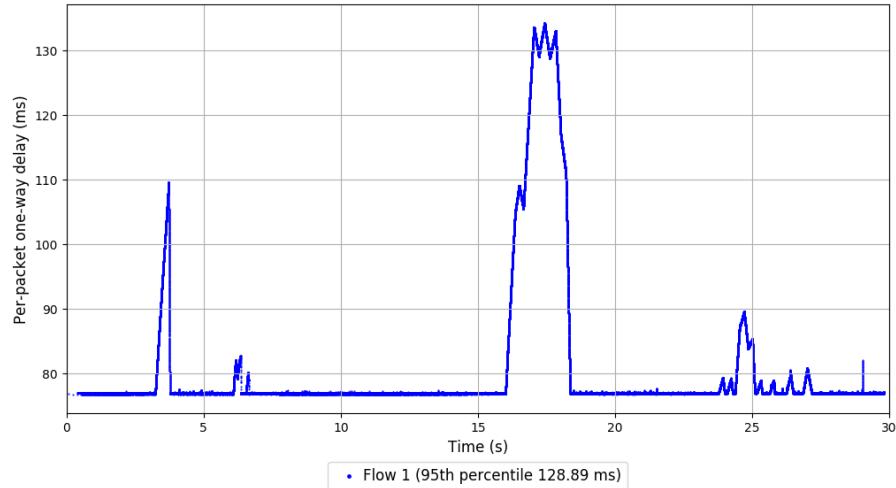
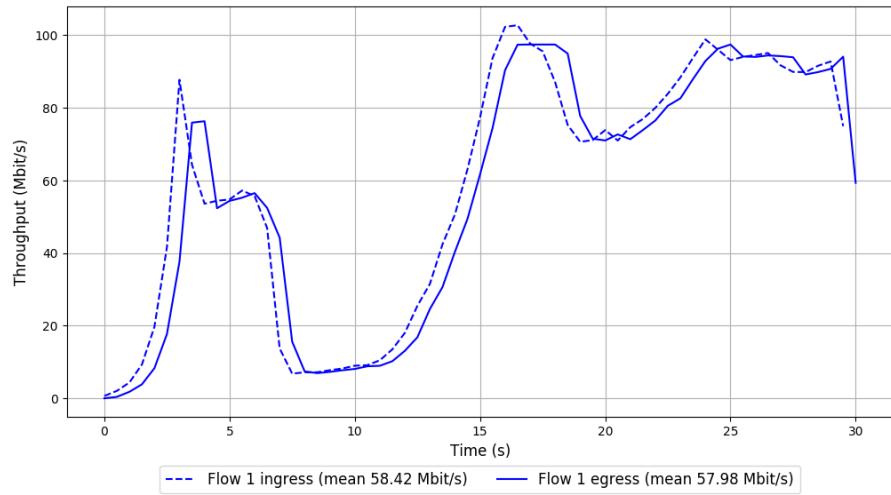


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-09-06 15:15:34
End at: 2018-09-06 15:16:04
Local clock offset: 3.853 ms
Remote clock offset: 2.954 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.98 Mbit/s
95th percentile per-packet one-way delay: 128.887 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 57.98 Mbit/s
95th percentile per-packet one-way delay: 128.887 ms
Loss rate: 1.27%
```

#### Run 4: Report of PCC-Vivace — Data Link

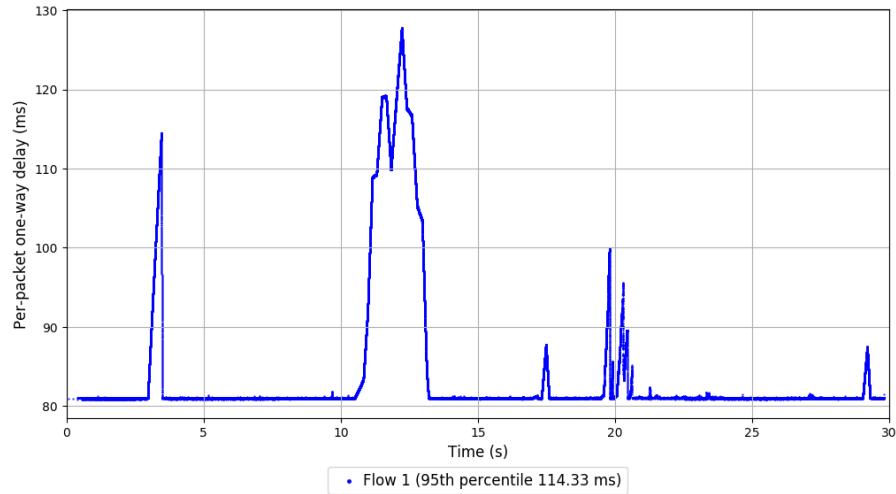
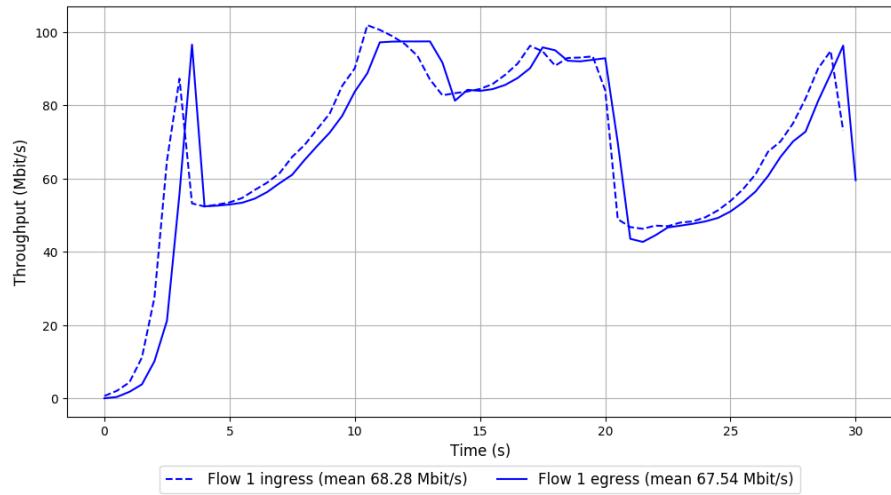


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-09-06 15:37:19
End at: 2018-09-06 15:37:50
Local clock offset: 3.707 ms
Remote clock offset: 0.952 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.54 Mbit/s
95th percentile per-packet one-way delay: 114.331 ms
Loss rate: 1.61%
-- Flow 1:
Average throughput: 67.54 Mbit/s
95th percentile per-packet one-way delay: 114.331 ms
Loss rate: 1.61%
```

Run 5: Report of PCC-Vivace — Data Link

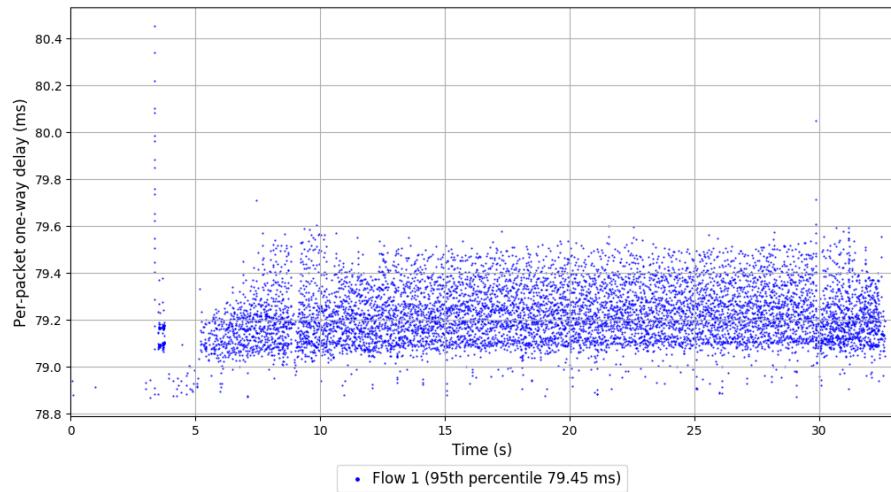
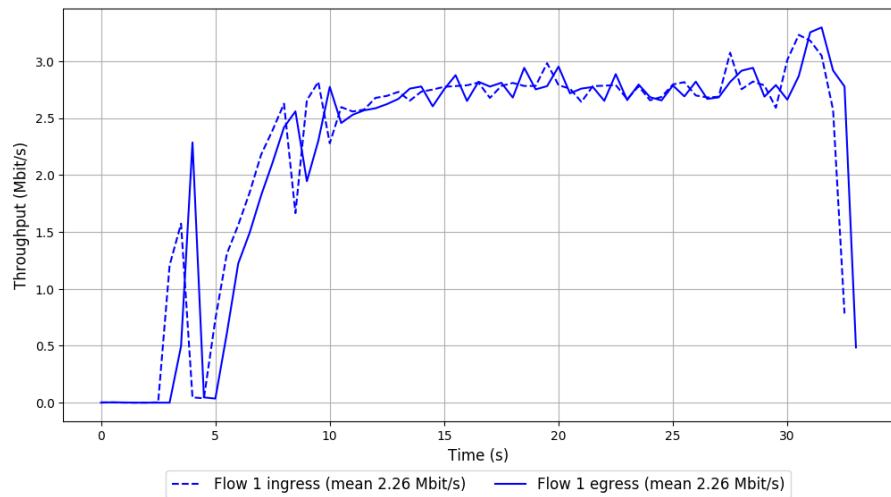


```
Run 1: Statistics of WebRTC media
```

```
Start at: 2018-09-06 14:24:59
End at: 2018-09-06 14:25:29
Local clock offset: 3.951 ms
Remote clock offset: -0.253 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 79.451 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 79.451 ms
Loss rate: 0.41%
```

Run 1: Report of WebRTC media — Data Link

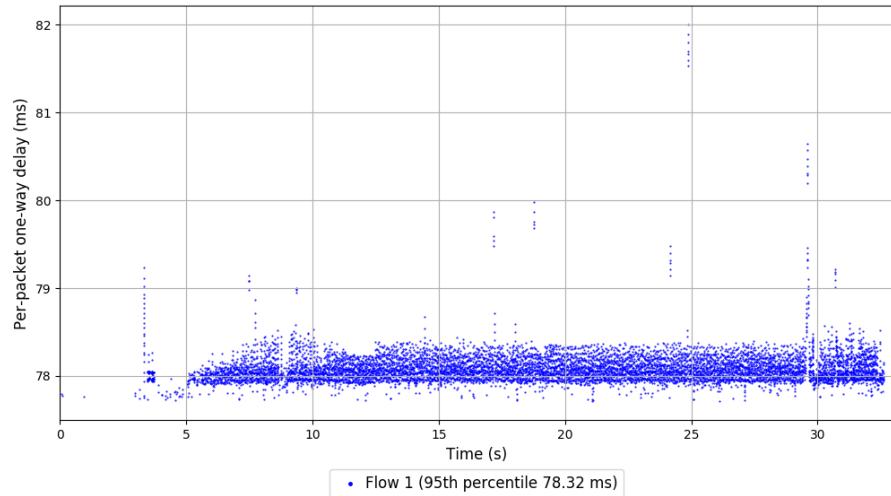
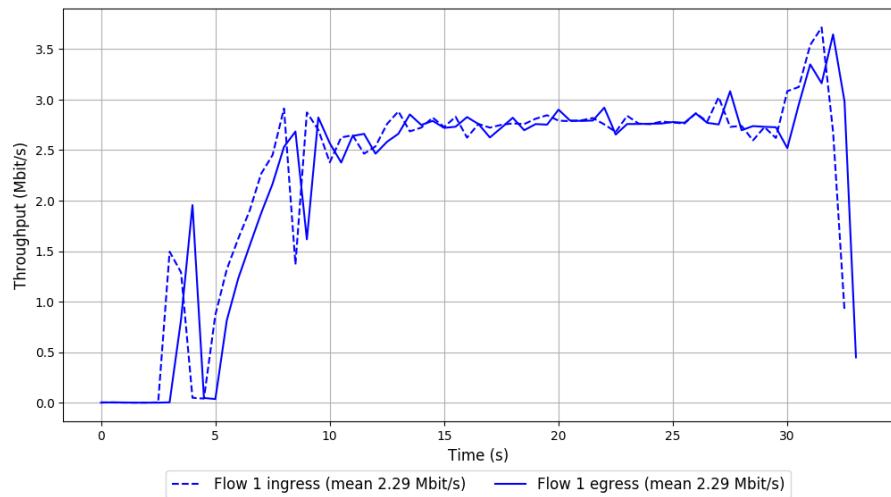


Run 2: Statistics of WebRTC media

```
Start at: 2018-09-06 14:46:14
End at: 2018-09-06 14:46:44
Local clock offset: 4.397 ms
Remote clock offset: 1.318 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 78.323 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 78.323 ms
Loss rate: 0.63%
```

Run 2: Report of WebRTC media — Data Link

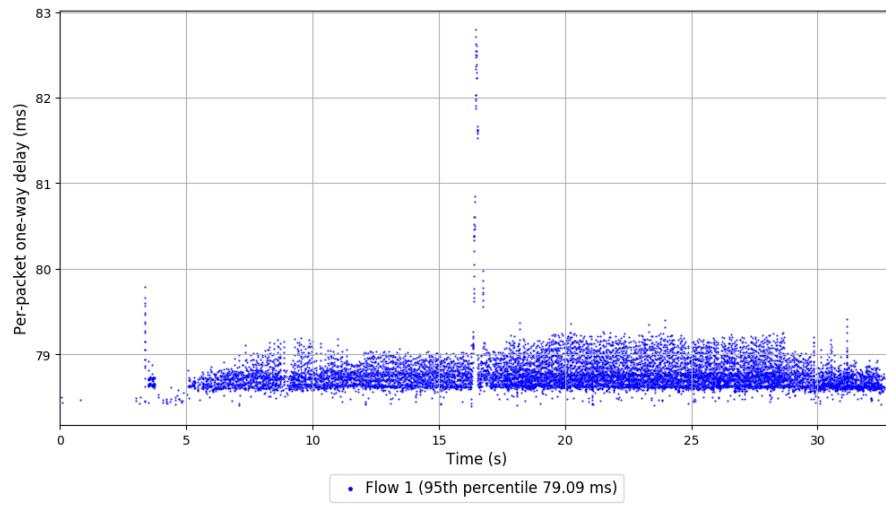
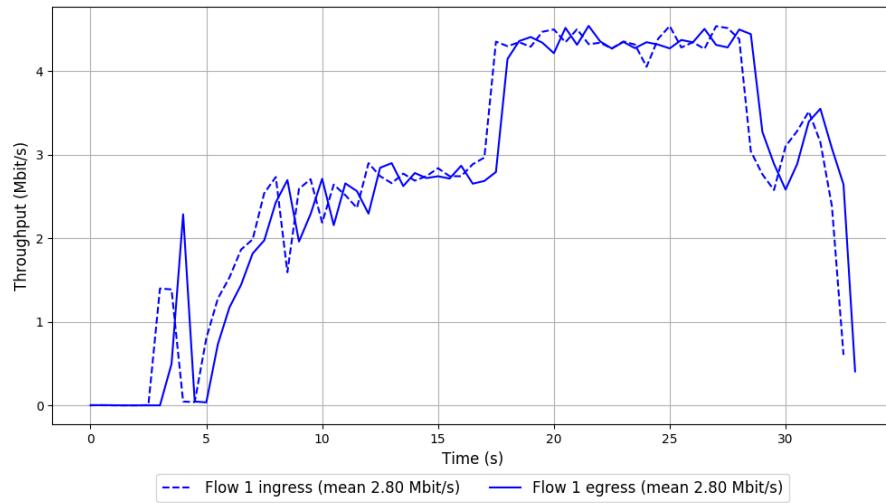


Run 3: Statistics of WebRTC media

```
Start at: 2018-09-06 15:07:26
End at: 2018-09-06 15:07:56
Local clock offset: 4.66 ms
Remote clock offset: 1.508 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 79.087 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 79.087 ms
Loss rate: 0.41%
```

Run 3: Report of WebRTC media — Data Link

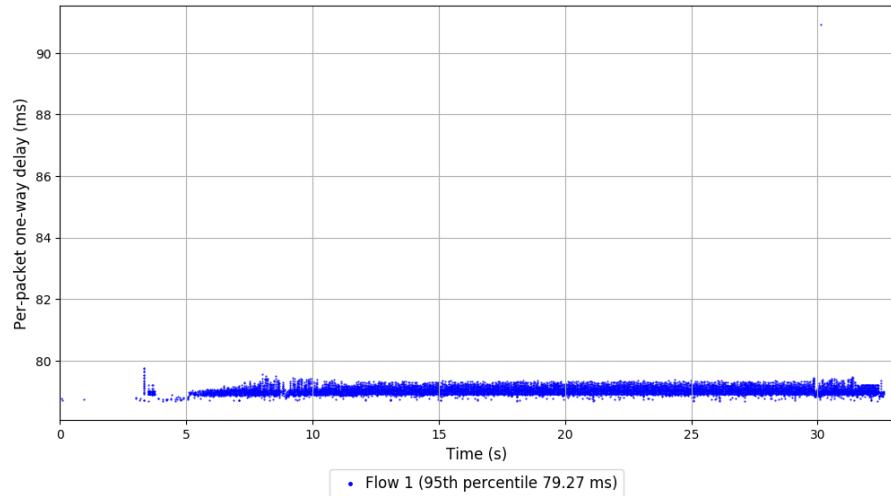
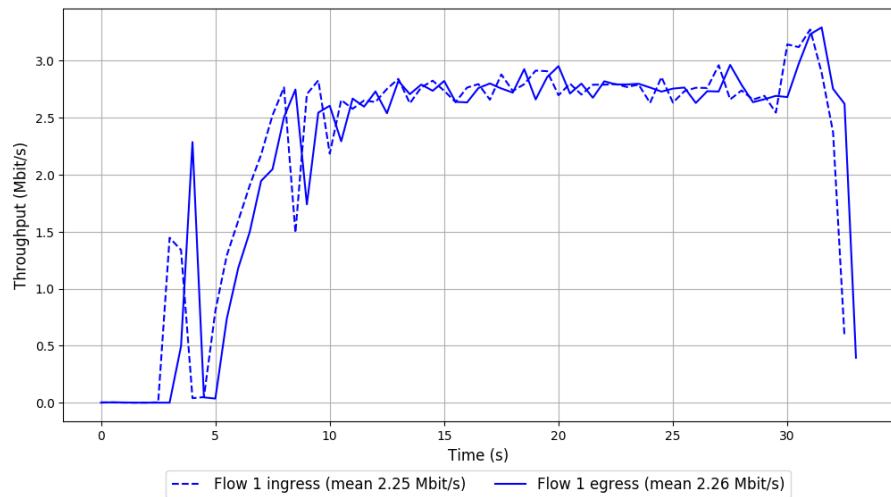


Run 4: Statistics of WebRTC media

```
Start at: 2018-09-06 15:29:08
End at: 2018-09-06 15:29:38
Local clock offset: 4.508 ms
Remote clock offset: 2.114 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 79.268 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 79.268 ms
Loss rate: 0.30%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-09-06 15:50:23
End at: 2018-09-06 15:50:53
Local clock offset: 4.994 ms
Remote clock offset: 3.238 ms

# Below is generated by plot.py at 2018-09-06 16:06:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.54 Mbit/s
95th percentile per-packet one-way delay: 76.609 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 2.54 Mbit/s
95th percentile per-packet one-way delay: 76.609 ms
Loss rate: 0.73%
```

Run 5: Report of WebRTC media — Data Link

